STATE OF FLORIDA

FY2019 SECTION 319(h) GRANT WORK PLAN

Submitted September 2018

Florida Department of Environmental Protection (Department)
Division of Water Restoration Assistance (DWRA)
Nonpoint Source Management Program (NPS)
Amanda Peck
Emily Forinash

Table of Contents

INTRODUCTION TO FLORIDA'S FY2019 SECTION 319(h) WORKPLAN

This FY2019 Section 319(h) Draft Work Plan consists of nine projects that were selected for Section 319 grant funding. In the winter of 2017 grant solicitation packages were sent out statewide and placed upon the Department's website. Department staff reviewed and evaluated the 18 proposals submitted in Spring 2018. Projects were prioritized for grant funding using the Project Evaluation Criteria included in the grant solicitation package. The projects were then presented to the DWRA's senior managers for final approval of the projects selected for funding.

The selected projects contribute to the implementation of the Department's NPS Management Plan. There are two Department program projects and one statewide education project with a state university under the Program Funding category.

- The two Department program projects are the NPS, TMDL and BMAP Administration activities and the bioassessment program. Section 1 of the NPS Management Plan describes the TMDL and BMAP watershed assessment and restoration processes, Section 2 of the NPS Management Plan describes the NPS Grant and Funding Administrative activities and Section 10 of the Plan describes the bioassessment program activities. The Florida Friendly Landscaping™ Program consists of urban educational activities which are identified as a priority in addressing urban stormwater pollution.

There are six projects with other government entities, local and state level, under the Watershed funding category. Four of the watershed projects address nonpoint source pollution in priority BMAP areas, identified as Tier 1 in the 2015 NPS Management Plan. The other projects address NPS pollution in Tier II BMAP areas, as identified in the Plan.

- Three of the workplan projects are targeted at reducing nutrients from urban stormwater which is identified in the Plan as a high priority for the Department.
- Three of the workplan projects target reducing pollution from septic tanks through the elimination of septic systems or developing methods to inspect, survey and monitor the effects of septic systems in the area. Septic systems are identified in the NPS Management Plan as being a source of nutrient pollution to Florida springs, surface and coastal systems.
- There is also one agriculture project under the Watershed funding category.

The specific references on how the projects are linked to the NPS Management Plan are provided in Table 1.

NATIONAL WATER QUALITY INITATIVE

The Department continues to work with the National Resource Conservation Service (NRCS) on the National Water Quality Initiative (NWQI). There are currently three watersheds identified for the NWQI funding. Two are in the northeast part of the state, Deep Creek and Clarks Creek, and one is in the panhandle, Little Scurlock Creek. Monitoring is currently ongoing at a farm in the Clarks Creek area. The Department is not requesting funding at this time for the NWQI but DEP staff coordinates with NRCS on the NWQI watershed selection and monitoring activities.

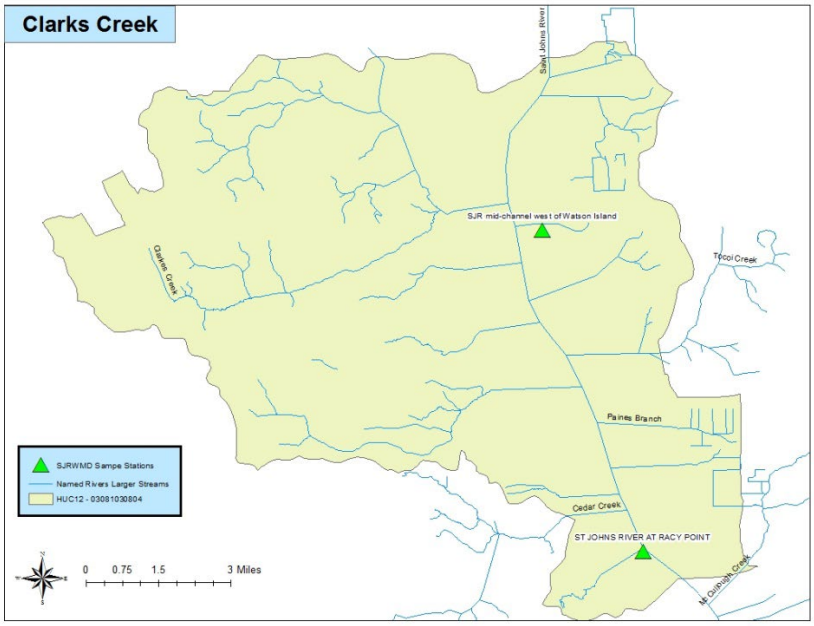
The Department is coordinating with the St. Johns River Water Management District to obtain water quality data in the Clarks Creek and Deep Creek Watersheds. Department staff is conducting the monitoring activities in the Little Scurlock Creek area. A summary of the ongoing monitoring activities is below.

The St. Johns River Water Management District monitors water quality in the Clarks Creek Watershed. Two locations are monitored monthly for the analytes in the table below.

Analysis Type	Parameters
Field Measurements	Dissolved Oxygen; pH; Salinity; Sample Depth; Secchi Depth; Specific Conductivity; Temperature
Water Quality Analysis	Alkalinity, Aluminum, Ammonia, Antimony, Arsenic, Barium, BOD-5 day, Cadmium, Calcium, Chloride, Chlorophyll-a, Chromium 3, Chromium III, Color, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Nitrite-Nitrate (NO2NO3), Pheophytin-a, Phosphorus, Potassium, Selenium, Silver, Sodium, Sulfate, Thallium, Total Kjehldahl Nitrogen, Total Organic Carbon, Total Silicon, Total Suspended Solids, Turbidity, Un-ionized Ammonia, Volatile Solids Suspended In Mixed Liquid, Zinc

Station ID	Station Name	Latitude	Longitude	Start Sample Date	*Last Sample Date
21FLSJWMSJWSIL	SJR mid-channel west of Watson Island	29.895	-81.594722	1997	Current
21FLSJWMSRP	ST JOHNS RIVER AT RACY POINT	29.798889	-81.564444	1997	Current

*The last sample date where data is available.

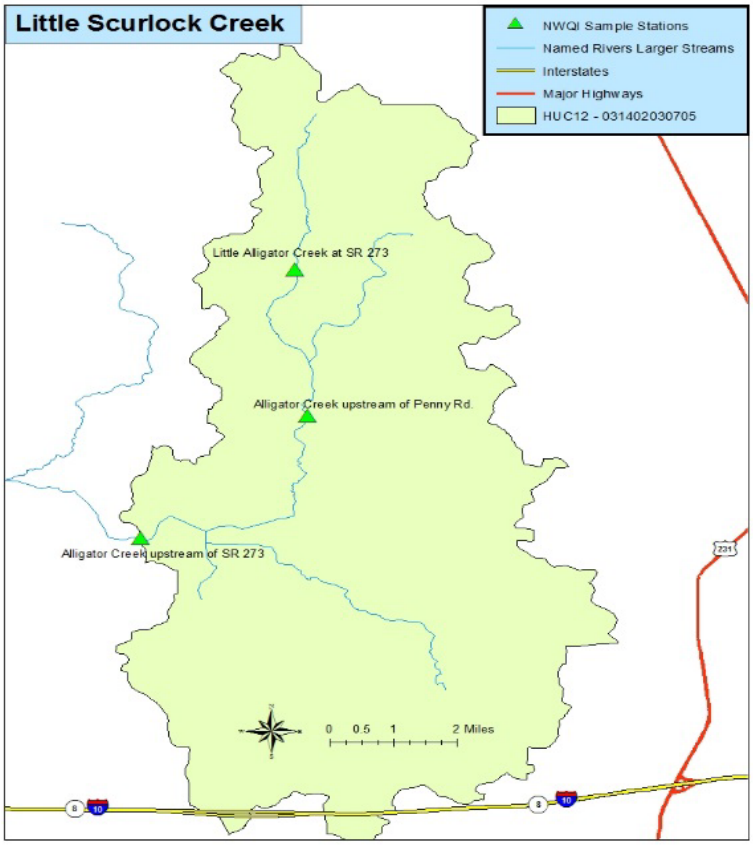


The Department's NWQI coordinator met with NRCS and the Department's sampling staff at the Little Scurlock site to develop a sampling plan for that area. The Florida Department of Environmental Protection is collecting water quality samples quarterly from three locations in the Little Scurlock Creek (also known as Alligator Creek) watershed for NWQI. Bioassessments will be collected twice from one station as part of Florida's 303(d) assessment monitoring. The analytes being monitored are listed in the table below.

Analysis Type	Parameters
Field Measurements	Dissolved Oxygen; pH; Salinity; Sample Depth; Secchi Depth; Specific Conductivity; Temperature
Water Quality Analysis	Alkalinity; Ammonia (NH4); BOD-5 day; Chloride; Chlorophyll-a (Corrected); Color (True); Fluoride; Nitrite-Nitrate (NO2NO3); Orthophosphate-filtered; Pheophytin-a; Sulfate; Total Dissolved Solids; Total Kjehldahl Nitrogen; Total Organic Carbon; Total Phosphorus; Total Suspended Solids; Turbidity
Bioassessments	Rapid Periphyton Survey, Linear Vegetation Survey

Station ID	Station Name	Latitude	Longitude	Start Sample Date	*Last Sample Date
G3WA0003	Alligator Creek upstream of Penny Rd.	30.8517	-85.4653	2015	2016
G3WA0005	Alligator Creek upstream of SR 273	30.819	-85.5042	2015	2016
G3WA0006	Little Alligator Creek at SR 273	30.88873	-85.46802	2015	2016

*The last sample date where data is available.

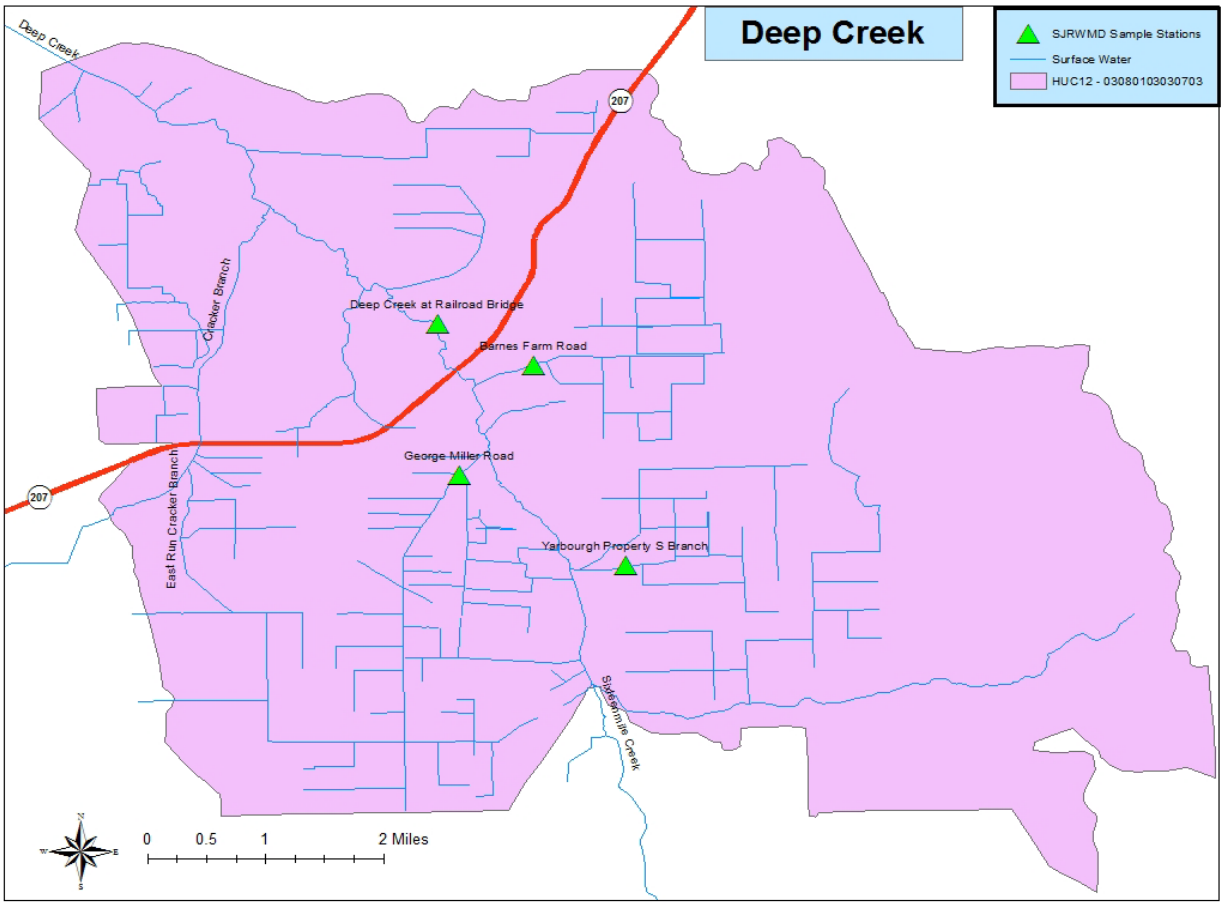


The St. Johns River Water Management District monitors water quality in the Deep Creek watershed. Four locations are monitored monthly for the analytes in the table below.

Analysis Type	Parameters
Field Measurements	Dissolved Oxygen; pH; Salinity; Sample Depth; Secchi Depth; Specific Conductivity; Temperature
Water Quality Analysis	Alkalinity, Aluminum, Ammonia, Antimony, Arsenic, Barium, BOD-5 day, Cadmium, Calcium, Chloride, Chlorophyll-a, Chromium 3, Chromium III, Color, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Nitrite-Nitrate (NO2NO3), Pheophytin-a, Phosphorus, Potassium, Selenium, Silver, Sodium, Sulfate, Thallium, Total Kjehldahl Nitrogen, Total Organic Carbon, Total Silicon, Total Suspended Solids, Turbidity, Un-ionized Ammonia, Volatile Solids Suspended In Mixed Liquid, Zinc

Station ID	Station Name	Latitude	Longitude	Start Sample Date	*Last Sample Date
21FLSJWM3F05YARS	Yarbourgh Property S Branch	29.6988	-81.463836	1997	current
21FLSJWM3F07GMR	George Miller Road	29.710275	-81.484294	1997	current
21FLSJWM3F08BFR	Barnes Farm Road	29.724206	-81.475208	1997	current
21FLSJWMDPB	Deep Creek at Railroad Bridge	29.729575	-81.486978	1997	current

*The last sample date where data is available.



PROGRAM PROJECTS

Over the past 25 years, the state has implemented a wide variety of nonpoint source management programs involving numerous state agencies, the water management districts, and local governments. These programs include non-regulatory and regulatory components, technical assistance, education, technology transfer, extensive interagency coordination and monitoring. The programs include both surface water and groundwater elements.

The Department's FY2019 program undertakes projects that will increase the environmental effectiveness of our NPS programs, expand our knowledge about the potential effects of various nonpoint sources on ground and surface waters, and expand our knowledge about the effectiveness of Best Management Practices (BMPs) in protecting ground and surface waters.

The projects described in this section of the Work Plan for program funding provide for:

- Administration of the program and management of selected sub-grantee projects;
- Development and Implementation of TMDLs and BMAPs;
- Improvement to the state's surface water NPS bioassessment program;
- Oversight and coordination of the state's National Water Quality Initiative (NWQI) activities;
- Continuation of the Florida Yards and Neighborhoods Sustainability of the Florida Friendly Landscaping™ Program (FYN), to protect water resources by educating Florida residents on "Florida Friendly" landscaping practices that reduce nonpoint source pollution from yards and other landscapes. This year's grant request will: continue the statewide coordination of the county FYN programs to implement the milestones set forth in the Action Plan for NPS Management Program Administration dated 2015.

Project 1, NPS/Watershed Program Administration. Support of the Nonpoint Source Management Section includes managing the restoration contracts associated with the program and watershed funding, overseeing the NWQI program, assisting with development of the state's Best Management Practice manuals and additional tasks such as updating the EPA Grants Reporting Tracking System. This funding provides support for staff, travel, and other expenses that are otherwise unavailable. In addition, the Division of Environmental Assistance and Restoration (DEAR) staff coordinates with state, regional, and local governmental agencies, local watershed groups, and nongovernmental organizations and other interested stakeholders to develop and implement Total Maximum Daily Loads and Basin Management Action Plans (9-Element Watershed Plans). This project addresses activities identified in Section 1 and 2 of the 2015 NPS Management Plan and implements milestones set forth in Appendix 1 of the Plan.

Project 2, Florida Friendly Landscaping™ Program. This project is a continuation of the Florida-Friendly Landscaping™ (FFL) program, a statewide Extension outreach program run for over twenty years as a partnership between the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS), the Department and the EPA. The program's top priority is to prevent nonpoint source pollution associated with urban landscaping and landscape maintenance, specifically by minimizing potential runoff/leaching of landscaping and turfgrass fertilizers (especially nitrogen), as well as pesticides. FFL educational outreach promotes nine principles of urban landscape design and maintenance that decrease fertilizer and pesticide use, and facilitates substantial water savings through more efficient home irrigation. This project addresses activities identified in Section 3 of the 2015 NPS Management Plan and implements milestones set forth in Appendix 1 of the Plan.

The Green Industries BMP for Protection of Water Resources in Florida Training program was developed to provide Green Industry professionals with the knowledge, tools and skills to minimize the environmental impacts of non-point sources of pollution related to their business practices. This program is currently delivered statewide by the UF/IFAS and is based on partnerships between Landscape and Green Industry businesses, local municipalities, scientists and homeowners. Regional coordination takes place through the UF/IFAS

Extension offices across the state. This project addresses activities identified in Section 3 of the 2015 NPS Management Plan and implements milestones set forth in Appendix 1 of the Plan.

Project 3, Bioassessment Program. The responsibility for monitoring the condition of Florida's surface and ground water resources lies with the Department and its restoration partners, including the Water Management Districts (WMDs) and local governments. The Department has developed biological monitoring tools and associated quality assurance (QA) for more than 25 years. The Department currently uses the Stream Condition Index (SCI), Habitat Assessment (HA), Lake Vegetation Index (LVI), Rapid Periphyton Survey (RPS), and Linear Vegetation Survey (LVS) to determine biological impairment due to nonpoint source pollution of nutrients, sediment, metals, and other pollutants. These biological assessment methods are included in Florida's Water Quality Standards and Impaired Waters Rules (62-302 and 62-303, Florida Administrative Code). This project is designed to increase our ability to monitor and assess the effects of NPS pollutants, the effectiveness of BMPs, and the effectiveness of the NPS management program. This project addresses activities identified in Section 10 of the 2015 NPS Management Plan and implements milestones set forth in Appendix 1 of the Plan.

WATERSHED PROGRAM PROJECTS

The remaining six local projects selected for funding will meet a variety of urban and agricultural related stormwater needs. All of these selected projects implement Best Management Practices (BMP) in Basin Management Action Plans (BMAPs) or Reasonable Assurance Plans (RAPs) and are identified as Watershed projects. Additionally, these projects all meet the goals set out in the NPS Management Plan for NPS Management Program 2015 Program Update. Scopes for the selected projects are included below.

Outputs for all Local Grantee Recipients (Project #s: 4-9)

Output: Final Report
Final Reports include the following information:

- Project location and background, project description and timeline, grant award amount and anticipated benefits.
- Financial summary of actual costs versus the budget, along with any changes required to the budget. Include any match provided, along with other related project work performed outside of this Agreement to identify the overall project cost.
- Discussion of project schedule versus actual completion, including changes required to the schedule, unexpected site conditions and adjustments, significant unexpected delays and corrections, and/or other significant deviations from the original project plan.
- Summary of activities completed as well as those not completed and why, as well as a brief summary of any additional phases yet to be completed.
- Dated color photo documentation of work performed (representative of the entire project), appropriate figures (site location, site plan(s), etc.), appropriate tables summarizing data/information relevant to Grant Work Plan tasks, and appropriate attachments relevant to the project.
- Discussion of whether the anticipated benefits have been/will be realized (e.g., why a BMP did or did not exceed the expected removal efficiency)
- Summary of monitoring activities completed and any not completed and why, monitoring results, and an interpretation of data based on planned versus realized results (this bullet applies to only Projects: 4, 5, & 6)
- Documented environmental results
- Description of any partnerships related to the project

Outcomes for all Local Grantee Recipients (Project #s: 4-9)

Outcomes include expected environmental results (load reductions and other water quality improvement information), partnerships, and any general BMAP and/or RAP information. Details on outcomes are included in the project information.

TABLE 1. FY19 Grant Funding Request, Project Selection- Program Projects

Project	Type/Mgmt Plan location	Title	Lead Agency	Watershed	FY19 319 Funding	FY19 319 Match Funds
1	Watershed Admin, Mgmt Plan pg. 17/Appendix 1.0; NPS Admin, Mgmt Plan pg. 31/ Appendix 2.0	NPS/Watershed Program Administration	FL DEP	Statewide	$2,329,076.00	$1,261,017.00
2	Urban, Mgmt Plan Pg. 38/ Appendix 3.0	FL Friendly Yards and Landscaping	University of Florida	Statewide	$437,922.90	$555,723.10
3	Urban, Mgmnt Plan pg. 112/ Appendix 10.0	Bioassessment	FL DEP	Statewide	$195,490.00	$138,018.00
TOTAL PROGRAM					**$2,962,488.00**	**$1,954,758.10**

TABLE 2. FY19 Grant Funding Request, Project Selection -Watershed

Project	Type/Mgmt Plan location	Title	Lead Agency	Watershed	FY19 319 Funding	FY19 319 Match Funds
2	Urban, Mgmt Plan Pg. 38/ Appendix 3.0	FL Friendly Yards and Landscaping	University of Florida	Statewide	$279,463.00	$186,309.00
4	Urban, Mgmt Plan Pg. 25/ Appendix 1-3.2(a)	Manatee Pocket Southwest Prong Water Quality Retrofit Project	Martin County	St. Lucie – Loxahatchee	$600,000.00	$400,000.00
5	Other/Water Quality/Ag Mngmt Plan Pg 25	McCarty Ranch Water Farming	Port St. Lucie	St. Lucie - Loxahatchee	$680,356.00	$1,020,534.00
6	Urban/Mgmt Plan Pg. 25, Appendix 1-3.2(a)	Fellsmere South Regional Lake Phase II	City of Fellsmere	Indian River Lagoon	$649,644.00	$433,097.00
7	OSTDS/Mgmt Plan Pg 25; #8 OSTDS Program, Pg. 99/ Appendix 1 – 8.1(a)	Wastewater Service Area Expansion	City of Ocala	Silver Springs	$295,000.00	$204,619.00
8	OSTDS/Mgmt Plan Pg 25; #8 OSTDS Program, Pg. 99/ Appendix 1 – 8.1(a)	Micco Sewer Line Extension Project	Brevard County	Indian River Lagoon	$496,331.00	$330,887.00

9	OSTDS/Mgmt Plan Pg 25; #8 OSTDS Program, Pg. 99/ Appendix 1 – 8.1(a)	Septic Tank Enforcement	Duval County DOH	Lower St Johns	$201,718.00	$139,568.00
Watershed Total					**$3,202,512.00**	**$2,715,014.00**
FY 19 Total Grant Request					**$6,343,266.00**	**$4,511,507.00**

Summary		
	Grant	**Match**
Total Salary/Personnel	$1,080,650.00	$587,825.00
Total Fringe	$728,416.00	$415,710.00
Total Travel	$20,000.00	$0
Total Indirect	$715,500.00	$395,500.00
Total Other	$3,640,434.90	$3,270,737.10
Total Grant Request	**$6,185,000.90**	**$4,669,722.10**
Total Match Required (40%)		$4,123,333.93
Total Match from State/Projects		$4,669,722.10
Match Percentage		**43%**
Program Total	$2,982,488.90	$1,954,758.10
Watershed Total	$3,202,512.00	$2,715,014.00
Program Percentage	**48.20%**	
Watershed Percentage	**51.80%**	

FLORIDA'S FY2019 SECTION 319(h) Workplan

PROJECT 1

PROJECT NAME: NPS/Watershed Program Administration

PROJECT FUNDING: $2,349,076.00 **MATCH:** $1,261,017.00

LEAD ORGANIZATION: Florida Department of Environmental Protection

PROJECT ABSTRACT: Florida's NPS Management Program identifies the natural resource management programs, strategies, and resources that currently are in place or that are needed to minimize or prevent nonpoint source pollution effects. The NPS Management Program identifies BMPs to control pollution from specific sources of nonpoint source pollution (e.g., agriculture, forestry, OSTDS, urban); identifies programs to assure implementation of programs, activities, and structural and nonstructural BMPs that will minimize or reduce NPS pollution; and coordinates restoration activities with other state and local entities, especially those leading to restoration of impaired waters. Section 319 grant financial support allows the NPS Management Program staff to properly administer the grant, to assure that all projects are properly completed, and to enhance the effectiveness of the state NPS/watershed management program.

In addition, the Division of Environmental Assistance and Restoration (DEAR) staff coordinates with state, regional, and local governmental agencies, local watershed groups, and nongovernmental organizations, and other interested stakeholders to develop and implement TMDLs. BMAPs are developed collaboratively with local stakeholders and are designed to identify management actions and schedules to meet the pollutant load reductions required by adopted TMDLs. Section 319 grant financial support allows the DEAR staff to develop and implement TMDLs and BMAPs.

PROJECT DESCRIPTION: The funds will pay the salaries of 1) a Program Administrator to oversee management of the NPS program; 2) seven full-time and one OPS NPS Environmental Specialists to manage selected projects; 3) one Deputy Director of DEAR to oversee management of the assessment, TMDL, and BMAP programs; 4) one Program Administrator to oversee management of the water quality restoration program (including BMAP development); 5) one Environmental Manager and three Environmental Consultants to develop and implement BMAPs; and 6) one Program Administrator, one Environmental Administrator, and one Environmental Consultant to develop and implement TMDLs. Requested funding also covers travel expenses of Department staff to meet with project sub-grantees on-site to ensure accountability of project funding, and provide site-specific nonpoint source expertise, to travel to EPA Nonpoint Source Workshops, and to provide for travel needed in order to assist in the development and implementation of TMDLs.

GOALS:

Goal: Successfully manage the 319 grant program.
(a**) Action:** Reduce the unliquidated obligations (ULOs) by utilizing leftover funds, emphasizing the five-year time frame in the proposal and selection process and evaluating the project contracting process.
(b) Action: Evaluate and update the NPS Management Plan on an ongoing basis and at least every five years.
(c) Action: Maintain 319 project data in the GRTS system.
Goal: Develop a centralized system to track all NPS restoration projects managed by the NPS Program or geared toward BMAP implementation.

(a) **Action:** Evaluate systems for suitability
Goal: Administer an effective NPS management program.
(a) **Action:** Provide technical expertise on issues relating to NPS management through meetings and inter-and intra-agency cooperation.
(b) Action: Provide educational materials and training on NPS management.
Goal: Develop TMDLs for verified impaired waterbodies.
(a) **Action:** Prioritize the waterbodies for TMDL development utilizing appropriate tools such as the EPA Recovery Potential Screening tool.
(b) **Action:** Develop TMDLs for waterbodies based on priority listing
Goal: Develop and implement BMAPs to implement TMDLs and restore water quality.
(a) **Action:** Prioritize watersheds for BMAP development utilizing the EPA Recovery Potential Screening tool.
(b) **Action:** Work with local and regional stakeholders to develop BMAPs for adoption**.**
(c) **Action:** Support projects that are targeted at implementation of BMAPs**.**
Goal: Restore impaired waters that are not part of a BMAP.
(a) **Action:** Support local entities in the development of RA plans, Nutrient Management Plans, or other water quality restoration plans for waterbodies that are impaired but are not slated for BMAP development.
(b) **Action:** Support projects geared toward the restoration of impaired waters that are not part of a BMAP.

PROJECT BUDGET – GRANT FUNDING

Admin Project Funding Activity	319 (h) Salary	Fringe (70.72%)	Indirect (39.3%)
1 Program Administrator NPS	$63,000.00	$44,554.00	$42,500.00
7 Environmental Specialist NPS	$310,500.00	$219,586.00	$210,000.00
1 OPS Environmental Specialist NPS	$42,000.00	$0.00	$20,000.00
OPS Health	$8,000.00	$0	$0
OPS FICA (1.45%)	$650.00	$0	$0
1 Deputy Director DEAR (TMDL & BMAP)	$105,000.00	$74,256.00	$70,500.00
1 Program Administrator BMAP	$74,000.00	$52,333.00	$50,000.00
3 Environmental Consultant BMAP	$159,500.00	$112,798.00	$107,500.00
1 Environmental Manager BMAP	$57,000.00	$40,310.00	$38,500.00
1 Program Administrator TMDL	$74,000.00	$52,333.00	$50,000.00
1 Environmental Administrator TMDL	$56,000.00	$39,603.00	$38,000.00
1 Environmental Consultant TMDL	$49,000.00	$34,653.00	$33,000.00
Totals:	**$998,650.00**	**$670,426.00**	**$660,000.00**
Travel (NPS)	**$20,000.00**		
GRAND TOTAL:	**$2,329,076.00**		

MATCH FUNDED POSITIONS:

Program Match Positions	Match Salary	Fringe (70.72%)	Indirect (39.3%)
1/4 Director DEAR	$30,250.00	$21,393.00	$20,500.00
1/4 Budget Director DEAR	$14,000.00	$9,900.00	$9,500.00
3 Environmental Consultant BMAP	$145,000.00	$102,544.00	$97,500.00
1/4 Director DWRA	$28,750.00	$20,332.00	$19,500.00
1/4 Staff Director DWRA	$21,825.00	$15,435.00	$15,000.00
1/4 Budget Director DWRA	$19,000.00	$13,437.00	$12,000.00
1/4 Admin. Assistant DWRA	$7,500.00	$5,304.00	$5,500.00
3 Environmental Consultant TMDL	$139,500.00	$98,654.00	$94,500.00
3 Environmental Specialist III TMDL	$124,000.00	$87,693.00	$82,500.00
Total:	**$529,825.00**	**$374,692.00**	**$356,500.00**
GRAND TOTAL:	**$1,261,017.00**		

PROJECT 2

PROJECT NAME: Continued Expansion and Sustainability of the Florida-Friendly Landscaping ™ Program to Protect Water Quality From Stormwater Runoff and Nonpoint Souce Pollution

PROJECT FUNDING: $717,385.90 **MATCH COMMITMENT:** $742,032.10

TOTAL PROJECT COST (Sum of Funding Request and Match Commitment): $1,459,417.00

LEAD ORGANIZATION:
Florida Cooperative Extension Service
University of Florida
Institute of Food and Agricultural Sciences

CONTACT:
Esengul Momol, Director
Florida-Friendly Landscaping™ Program
University of Florida
Environmental Horticulture Department
PO Box 110675, Gainesville, FL 32611-0675
Phone: (352) 273-452 Fax: (352) 392-1413
eam@ufl.edu

FINANCIAL COOPERATING PARTNERS: FDEP and UF/IFAS

OTHER COOPERATING PARTNERS:
The Florida-Friendly Landscaping™ (FFL) Program has grown to become a cooperative effort involving many organizations including the state's water management districts, utilities, city and county governments, the Suwannee River Partnership, the Department, Florida Nursery, Growers, and Landscape Association (FNGLA) and many other industry and civic groups, along with other UF/IFAS programs (Program for Resource Efficient Communities-PREC, Florida Master Gardener Program, Integrated Pest Management Florida, and the UF Water Institute).

PROJECT LOCATION AND WATERSHED CHARACTERISTICS:
FFL is an educational outreach program that covers the entire State of Florida.

PROJECT ABSTRACT: This project is a continuation of the FFL program, a statewide Extension outreach program run for over twenty years as a partnership between the University of Florida Institute of Food and Agricultural Sciences (UF/IFAS), the Florida Department of Environmental Protection (FDEP) and the EPA. The program's top priority is to prevent nonpoint source pollution associated with urban landscaping and landscape maintenance, specifically by minimizing potential runoff/leaching of landscaping and turfgrass fertilizers (especially nitrogen), as well as pesticides. FFL educational outreach promotes nine principles of urban landscape design and maintenance that decrease fertilizer and pesticide use, and facilitates substantial water savings through more efficient home irrigation.

PROJECT OBJECTIVE(S): The primary focus for FFL is public education on the nine FFL principles delivered statewide through UF/IFAS Extension; and training and certification of landscaping professionals through the Green Industries Best Management Practices Program. The nine principles are:

1. Right Plant, Right Place -- promotes landscaping plant selection that matches a site's soil, light, water, and climatic conditions so that, once established, they will require little to no supplemental water, fertilizer, or pesticides.
2. Water Efficiently -- emphasizes landscape design that groups together plants with similar water needs; install zoned irrigation systems with rain shutoff devices or soil moisture sensors.
3. Fertilize Appropriately – provides UF/IFAS recommendations for proper fertilizer application rates and methodology to minimize potential nutrient runoff and leaching.
4. Mulch – promotes proper use of mulch to retain soil moisture, protect plants, and inhibit weed growth.
5. Attract Wildlife – promotes landscaping plants used for food, water, and shelter by birds, butterflies, bats, and others.
6. Manage Yard Pests Responsibly – promotes Integrated Pest Management (IPM), a strategy that helps gardeners manage pests with as few chemicals as possible.
7. Recycle Yard Waste – promotes composting of yard waste for subsequent use as a soil amendment.
8. Reduce Stormwater Runoff – promotes landscape design features such as rain gardens, berms, or swales that slow runoff from heavy rains and allow the water time to soak into the ground.
9. Protect the Waterfront – promotes a 10-ft wide "maintenance free zone" around lake, river, and stream shorelines within which no fertilizer is applied.

FFL has served Florida citizens as a nonpoint source pollution prevention and water conservation program for more than 20 years. During that time the program has evolved to reach multiple target audiences that include residential homeowners, community builders/developers/property managers, and landscaping professionals in the green industries. Effective public outreach to these diverse audiences requires multiple outreach methods.

PROJECT DESCRIPTION: Outreach methods to FFL's primary target audiences are described below:

Target Audience: Residential Homeowners
Florida already has some 20 million residents in nearly 8 million households; however, this population is projected to grow to nearly 26 million over the next two decades. Public outreach to Florida's diverse and ever growing population is likewise an ever growing challenge for the FFL program. For this reason the FFL program has a dedicated program component called the Florida Yards & Neighborhoods (FYN) program that interfaces primarily with residential homeowners or homeowners/property associations. The FFL state office staff includes a statewide FYN coordinator who coordinates with county-based Extension agents and FFL coordinators throughout the state, ensuring that programming for the FFL nine principles is delivered in a comprehensive and consistent manner. The county-based Extension agents and FFL coordinators mean that FFL is active in 47 of Florida's 67 counties. Each year, in collaboration with the statewide UF/IFAS Extension network, the FYN program distributes many thousands of printed copies of its two main publications:

1. The Florida-Friendly Landscaping™ Guide to Plant Selection & Landscape Design
(http://ffl.ifas.ufl.edu/pdf/FYN_Plant_Selection_Guide_2015.pdf)
2. The Florida Yards & Neighborhoods Handbook
(http://ffl.ifas.ufl.edu/materials/FYN_Handbook_2015_web.pdf)

The last print run for the plant selection guide was for 40,000 copies. Numerous other publications are also available online (http://ffl.ifas.ufl.edu/homeowners/publications.htm).

In addition, FFL works closely with the UF/IFAS Master Gardener (MG) program, which is a statewide network of nearly 4,700 volunteers organized through MG programs at the county level. MGs undergo extensive training on all aspects of Florida gardening, including comprehensive training on FFL. In turn, the MGs conduct myriad gardening workshops year around throughout Florida targeted at the landscaping needs of Florida residential homeowners. The MG program closely tracks all volunteer hours and interactions with the public. The state Master Gardener Coordinator estimates FFL-related activities - workshops, consultations,

and public events - comprise an estimated 50% of the Master Gardener's volunteer efforts. Based on that estimate, for 2017, Florida Master Gardener volunteers spent 184,567 hours promoting FFL concepts and reached 190,219 Floridians.

To facilitate statewide consistency in FFL educational outreach, the FYN state coordinator, in collaboration with the FFL team and UF/IFAS faculty advisors, recently completed an updated and revised FFL curriculum that provides consistent training in educating Extension agents about FFL practices. The curriculum update includes a new 322 page curriculum manual, *The Florida-Friendly Landscaping™ Curriculum Instructor Manual*, which provides extension professionals and FFL educators a science-based, standard training curriculum detailing the nine FFL principles. The curriculum includes ten modules, each with a lesson plan, guided learning activities, a standard PowerPoint presentation, and both a pre- and post-test. The lesson plans outline the learning objectives and activities that complement each PowerPoint presentation, while the pre- and post-tests measure knowledge gain on a county level. Educators are encouraged to use the six month follow up FFL Behavior Change Survey. This survey measures behavior change as a result of attending FFL training and is designed to help develop impact reporting. Details on how to participate in this survey can be found on the FFL FYN Educators Log in Site http://ffl.ifas.ufl.edu/educators/index.htm (password protected link). This standard training curriculum facilitates a science-based, consistent message for presenting the FFL principles statewide.

Target Audience: Builders/Developers/Property Managers:

This past year has seen a dramatic increase in construction and development. As Florida's population continues to grow and more new master-planned residential land development projects are launched the FFL Builder & Developer (B&D) program is more important than ever. Decisions associated with these large scale projects will significantly and directly impact the availability and quality of Florida's water resources, which in turn will determine the resilience and sustainability of Florida's urban, agricultural, and natural systems. Making more resource-efficient design, construction, and management choices in residential landscapes offers the potential to significantly and measurably conserve and improve the quality of Florida's water resources.

The goal of the FYN program for builders and developers is to develop, implement and evaluate new and existing UF/IFAS programs that reduce consumptive use of water, improve water quality, and protect and conserve natural resources. FYN programs cultivate professional partnerships with builders, developers and other professionals such as land planners, community developers, home builders, landscape architects, government officials, engineers, community association managers, realtors, environmental consultants, urban planners and, utility representatives.

The B&D program encourages environmentally sensitive land planning and low impact development techniques. By collaborating with professional and trade organizations, including the Florida water management districts, Florida Green Building Coalition, Florida Irrigation Society, the B&D program encourages environmentally sensitive land planning and low impact development techniques.

The B&D program provides model code development documents including the following publications:

- FFL Model Covenants, Conditions and Restrictions for New and Existing Community Associations
- A list of considerations for FFL guidelines for architectural review boards
- Model Ordinance for Florida-Friendly Fertilizer Use on Urban Landscapes
- FFL Model Landscape Maintenance Contract

Target Audience: Green Industry Professionals

The Green Industries Best Management Practices (GI-BMP) Program is a major component of the overall FFL program. The GI-BMP program targets all landscape professionals within Florida who apply fertilizer commercially as a landscaping business owner or landscaping crew member. In Florida, all such persons must have a Limited Urban Commercial Fertilizer Applicator's License from the Florida Department of Agriculture.

To get this license, a green industry professional must first complete the UF/IFAS GI-BMP training and pass a comprehensive certification exam.

GI-BMP training is offered year around throughout Florida through UF/IFAS Extension and affiliated partners. GI-BMP training consists of six modules covering all aspects of the FFL nine principles, but with a special emphasis on proper fertilizer application. The six GI-BMP training modules are:

1. Introduction
2. Best Management Practices for Design and Installation of Landscapes
3. Irrigation Best Management Practices
4. Mulching, Mowing, and Pruning
5. Fertilization
6. Pest Control

GI-BMP training is delivered through multiple outreach methods including a traditional classroom setting with an in-person instructor, an online course, and a DVD-based course. In-person classes are offered in English, Spanish and Haitian Creole. The online and DVD-based courses are offered in English and Spanish. Statewide, there are some 250 active GI-BMP instructors comprised of UF/IFAS Extension agents and green industry professionals.

In-person training requires a full day in the classroom. The online and DVD-based courses are self-paced, but include the full training contents of the classroom course. During 2017, 156 in-person training classes (19 in Spanish, 137 in English) were held at numerous venues and had a total attendance of 3,117, with 2,224 passing the exam and receiving their GI-BMP certification. (Not all persons who take the in-person course take the certification exam.) An additional 1,514 persons were certified through the online option and 532 through the DVD-based course. All persons earning their GI-BMP certification are eligible to apply for their Limited Urban Commercial Fertilizer Applicator's License from the Florida Department of Agriculture. Since the program's inception in 2006 (and through December 2017), 1,893 in-person GI-BMP classes have been held and (counting also the online and DVD courses) 54,069 persons have taken the GI-BMP training.

EFFECTIVENESS: The FDEP TMDL program recognizes an active FYN program within a county or municipality as an effective project component when developing nonpoint source load reduction alternatives for inclusion in BMAPs for impaired waters. For example, when calculating nitrogen load reductions for impaired waters, an active FYN program allows up to 3% of the starting nitrogen load to be credited as nitrogen removed towards meeting the TMDL nitrogen loading goal.

PROJECT BUDGET:
The grant will fund eight full time salaried positions, 2 or more OPS positions (1.5 FTE), along with the associated costs, such as expenses, supplies and travel, required to carry out the activities described in the above task.

PROJECT GOALS:

Goal: Educate the public and industry through outreach and training.
(a) Action: Increase the use and understanding of Florida-friendly Landscaping™ (FFL) principles.
(b) Action: Educate green industry professionals about BMPs.

FFL 319 Categories*	Grant	Match
Program	$437,922.90	$ 397,458.28
Watershed	$ 279,463.00	$ 186,309.00
Total	$717,385.90	$742,032.10

*The program/watershed allocation is based on the total 47 Florida Counties that are actively involved in the GI-BMP and FFL programs outreach efforts. Of these 47, 15 counties are associated with BMAP areas and considered watershed funding. The 32 counties that are not associated with a BMAP area are considered program funding.

PROJECT 3

PROJECT NAME: Bioassessment Development and Quality Assurance

PROJECT FUNDING REQUEST: $195,490 **MATCH COMMITMENT:** $138,018

PROJECT COST: $333,508

LEAD ORGANIZATION: Florida Department of Environmental Protection, Aquatic Ecology QA Section

CONTACT INFORMATION:

Name: Nijole (Nia) Wellendorf
Street Address: 2600 Blair Stone Rd., MS 6511
City, State, Zip: Tallahassee, FL 32399
Tel: (850) 245-8190
Email: nijole.wellendorf@dep.state.fl.us

Geographic Location (city and county): Statewide

PROJECT OVERVIEW:

The Florida Department of Environmental Protection (department) has a mature bioassessment program that has developed biological monitoring tools and associated quality assurance (QA) for more than 25 years. The department currently uses the Stream Condition Index (SCI), Habitat Assessment (HA), Lake Vegetation Index (LVI), Rapid Periphyton Survey (RPS), and Linear Vegetation Survey (LVS) to determine biological impairment due to nonpoint source pollution of nutrients, sediment, metals, and other pollutants. These biological assessment methods are included in Florida's Water Quality Standards and Impaired Waters Rules (62-302 and 62-303, Florida Administrative Code), and therefore numerous entities outside of the department are using these methods as well. A rigorous quality assurance component to this program is essential for accurate and scientifically defensible decision-making with bioassessment data. The requested funding would support quality assurance activities, including accurate metric calculations for external parties, and further tool development for the department's bioassessment activities.

Training is an essential element of the bioassessment program, including field sampling method training for new employees and training for all staff on new tools and approaches to be used in conjunction with bioassessment methods. Some of the requested funds would be used to cover travel costs associated with staff attendance at bioassessment sampling training (as trainers and trainees) and the annual Biocriteria meeting. The Biocriteria meeting also serves as a means of educating other private and public entities throughout the state on use of the department's biological assessment methods.

One of the QA components for the department's SCI, LVI, and LVS assessments is taxonomic verification by subject matter experts outside the department for specimens with unknown identification or those specimens to be included in reference collections.

Project evaluation elements include number of staff within and outside of the Department who are trained annually on Bioassessment sampling methods, number of participants in Biocriteria meetings, and assessment decisions made with the support of bioassessment data.

PROJECT GOALS:

Goal: Evaluate waterbodies for NPS pollution through a bioassessment program.

(a) Action: Improve integration of existing bioassessment tools into statewide monitoring and assessment programs as well as water resource programs.
(b) Action: Continue to provide technical support staff to the statewide bioassessment program to both implement and expand sampling programs and manage the flow of statewide data collection, analysis, and reporting to program managers and the public.

Project evaluation elements include number of staff within and outside of the Department who are trained annually on bioassessment sampling methods, number of participants in Biocriteria meetings, and assessment decisions made with the support of bioassessment data.

PROJECT FUNDING and TIMELINE:

Admin Project Funding Activity	319(h) Salary	Fringe (70.72%)	Indirect (39.3%)
2 Environmental Specialist II	$82,000.00	$57,990.00	$55,500.00
Total:	**$82,000.00**	**$57,990.00**	**$55,500.00**
GRAND TOTAL:	**$195,490.00**		

Program Match Positions	Match Salary	Fringe (70.72%)	Indirect (39.3%)
1 Environmental Administrator	$58,000.00	$41,018.00	$39,000.00
Total:	**$58,000.00**	**$41,018.00**	**$39,000.00**
GRAND TOTAL:	**$138,018.00**		

Total Number of Months for the Project: 36

PROJECT 4

PROJECT NAME: Manatee Pocket Southwest Prong Water Quality Retrofit Project

PROJECT TYPE (Check all that apply): ☑ Urban ☐ Agricultural ☐ Education Only ☐ OSTDS ☐ Other (describe)

PROJECT FUNDING REQUEST: $ 600,000 **MATCH COMMITMENT:** $ 400,000

TOTAL PROJECT COST (Sum of Funding Request and Match Commitment): $1,000,000

LEAD ORGANIZATION: Martin County Board of County Commissioners (MCBOCC)

CONTACT INFORMATION:

NAME:	GREG NOLTE
Street Address:	2401 SE Monterey Road
City, State, Zip:	Stuart, Florida 34996
Tel:	(772) 221-2380
Fax:	(772) 288-5955
Email:	gnolte@martin.fl.us

FINANCIAL COOPERATING PARTNERS:
MC BOCC – Terry Rauth, Director, Public Works trauth@martin.fl.us

PROJECT LOCATION AND WATERSHED CHARACTERISTICS:

Geographic Location, City and County: Port Salerno, Martin County, Florida
Size of Project Impact (area needed to build project): 3.90 acres
Size of Area Being Treated: ~281acres
Latitude (decimal degrees): N 27.141930°
Longitude (decimal degrees): W 80.193358°
Name of Impaired Waterbody Affected: St. Lucie River and Estuary Basin
Waterbody ID of Impaired Waterbody Affected (WBID): WBID 3210
TMDL Status and Name, if Applicable: Adopted, St. Lucie River & Estuary Basin
TMDL Impairment: Nutrients and Dissolved Oxygen
Impairments To Be Addressed by Project: Nitrogen, Phosphorus and Dissolved Oxygen

Does this project fall within the boundaries of a developing or adopted basin management action plan (BMAP) or within an adopted reasonable assurance plan (RAP)? Check one of the following:

☑ Adopted BMAP ☐ Developing BMAP ☐ Adopted RAP

Enter name of BMAP or RAP:

Basin Management Action Plan for the Implementation of Total Maximum Daily Loads for Nutrients and Dissolved Oxygen by the Florida Department of Environmental Protection in the St. Lucie River and Estuary Basin.

This project contributes to pollutant reductions specified in the BMAP or RAP.
☑ Yes ☐ No

If yes, briefly describe the pollutant reductions specified in the BMAP or RAP that the project is addressing.

Martin County has identified the Manatee Pocket SW Prong Water Quality Retrofit Project (Project) as a second priority project within the County's Stormwater Needs Assessment report. The Stormwater Needs Assessment (SNA) reports identifies potential future water quality projects and estimates load reductions for each project in order to guide the County in the decision-making process to meet the TMDL/BMAP requirements. The Project is listed as a second priority project simply because it lies within the South Coastal sub-basin, which is outside the current BMAP boundary. However, existing and proposed projects within the South Coastal sub-basin will be considered for credit in the next 2018 BMAP iteration, currently underway, and will be shown as a first priority project in the SNA. Once funded, the Project will be listed in the next subsequent update of the Progress Report for the St. Lucie River Estuary BMAP, as it will achieve load reductions for parameters of concern specified in the BMAP. The Project anticipates load reductions of Total Phosphorus (TP) by 60.3% (188 lbs/year) and Total Nitrogen (TN) by 31.6% (451 lbs/year).

Is this project listed in an adopted BMAP document?

☑ Yes ☐ No

If yes, provide the name of the plan or Annual Update/Report to a BMAP document and the page number where the project is listed.

The Project will be listed as a proposed project in the 2018 Progress Report of the BMAP. Typically a project would not be listed in the BMAP until it has a Capital Improvement Plan (CIP) sheet, adopted by the Board of County Commissioners. This Project has an adopted FY18 CIP sheet with dedicated local funding as well as this grant request. A list of first and second priority projects as identified in the SNA report, has been provided to FDEP, and this Project is listed.

Are the activities in this project required under a permit or does it implement permit application requirements (e.g., municipal separate storm sewer system [MS4], National Pollutant Discharge Elimination System [NPDES])?

☐ Yes ☑ No

LAND USE and STATUS:

Land Use	**Acres**	**%**
Residential Medium Density (1200)	79.04	28.2%
Residential High Density (1300)	86.16	30.7%
Commercial and Services (1400)	44.80	16.0%
Institutional (1700)	26.16	9.3%
Open Land (1900)	16.32	5.8%
Upland Forests (4000)	5.49	2.0%
Water (5000)	9.21	3.3%
Wetlands (6000)	8.40	3.0%
Transportation, Communication, and Utilities (8000)	5.15	1.8%
Land Use Totals (Acreage and %)	**280.73**	**100%**

Land Ownership Status: (check one):

☐ Land necessary for the construction of treatment infrastructure has been acquired. Title is held by:

☐ Land necessary for the construction of treatment infrastructure is under a legal option to buy (please provide documentation of the option-to-buy and funding to execute the purchase).

☐ Land necessary for the construction of treatment infrastructure is under an easement that allows for construction and access.

The property for the proposed project is comprised of a number of platted lots, held by three different private Owners. The County has reached out to the Owner of the majority of the lots and expressed our interest in acquiring the property. The Owner was reasonable and indicated an interest in selling a portion of the land. The other two Owners have not yet been contacted, however, each of them have only one lot to acquire. The Project schedule designates land acquisition to be completed by the end of 2018. We commit to keeping you apprised as this situation develops, and will provide the requested land ownership status information as we identify the path forward for this property in cooperation with the Owners.

PROJECT OVERVIEW:

The Project is located within the Hanson Grant area, Township 38 South, Range 41 East, of Port Salerno, east central Martin County, Florida. The watershed served by this project is approximately 281-acres and consists primarily of platted single-family and multi-family residential lots, with some high- and low-intensity commercial properties, a cemetery, middle school, a shopping center and some undeveloped properties. More specifically, the project site is located north of Cove Road, west of SE Dixie Highway, south of SE Broward Street and east of the County's Salerno Creek Retrofit project.

The SW Prong Basin, upstream of the proposed project, is comprised of highly impervious land uses, including commercial properties along US Highway 1, medium- and high-density residential developments, a local middle school, cemetery and some undeveloped lands. Most all of the basin upstream of the proposed project was developed prior to today's design standards for water quality treatment and has been identified as a major contributor of high concentrations of nitrogen, phosphorus and sediments.

The Project proposes to construct an approximately 2.48-acre shallow treatment wetlands and a deep, wet detention lake configured in a treatment train system, and install a water quality treatment control structure prior to discharging into the Manatee Pocket. The project would be located on approximately 3.9-acres of land, which is yet to be acquired, directly upstream of the Manatee Pocket. The purpose of the treatment train system is to reduce the velocities, and maximize storage capacity, attenuation and residence time in order to achieve the most possible pollutant load reductions within the deep, wet detention lakes, by physical settling of the suspended solids. The treatment wetlands will be planted with native herbaceous, emergent and submergent plants for further polishing of the stormwater through the biological uptake of nutrients by the plants. The purpose of the water quality control structure will be to maximize attenuation and residence time, allowing for ground water recharge, and improve timing of freshwater discharges to the estuary.

Section 319 grant funds and the associated matching funds will facilitate the construction activities such as site clearing, exotic removal, grubbing, excavation, embankment, grading, sodding, planting of trees and native wetland plants. Pipes, control structures, weirs or any other items that would be considered point source structures would not be included in the Section 319 grant or match, but funded through other means.

The County proposes a water quality monitoring program that will develop a complete hydrologic budget, based on continuous flow-weighted composite sampling for a minimum of one year. Please see below, "Effectiveness Evaluation", for a more detailed description of the water quality-monitoring program proposed. Section 319 grant funds will be utilized for the monitoring program.

Describe educational activities that are part of the project

A significant educational component is proposed for this project using a minimum of three educational signs on an educational trail and a kiosk with signage. Martin County will utilize social media and our Martin County Television (MCTV), to the extent possible, to share information with residents regarding our efforts to maximize treatment efficiency within the watershed to achieve water quality results. County staff will participate in a community event to provide educational information regarding stormwater runoff, which will

include a specific display associated with this project. A student volunteer group will be organized to install placards that read, " Dump No Waste, Drains to the River" on catch basins within the upstream contributing neighborhoods.

Objective

The primary objective of the Project is to treat non-point source runoff and provide water quality benefits by reducing the nutrient loads of TN by an estimated 31.6% (451 lbs/year), TP by 60.3% (188 lbs/year) and sediments to the St Lucie River and Estuary, a nutrient impaired water body with an adopted TMDL and BMAP.

The project will be designed and configured in a treatment train system, alternating with a deep, wet detention lake and shallow water, treatment wetlands, which will be planted with native herbaceous emergent and submergent plants. To achieve the objectives of the project, storage capacity and attenuation will be maximized in order to increase the residence time within the project, and achieve the most possible pollutant load reductions. Further polishing of the stormwater through the biological uptake of nutrients by the vegetation planted in the treatment wetlands will provide additional water quality treatment. The project will be designed to provide ground water recharge and improve timing of fresh water discharges to the St. Lucie Estuary.

Other objectives of the project are to:

- ✓ implement an educational program that will explain the environmental impacts of stormwater and highlight the benefits of this project to improve water quality in the St. Lucie River, and educate the public of the TMDL program;
- ✓ to implement a water quality monitoring program that will provide data analysis on the pollutant removal efficiency of the BMPs.
- ✓ increase the survivability of oysters and sea grasses within the South St. Lucie Estuary and South Indian River Lagoon, by means of reducing fresh water flows;
- ✓ Reduce sediment transport into the Manatee Pocket, which was dredged in 2012 at a cost of $13 million.

Project Effectiveness Evaluation

The County proposes a water quality monitoring program that will develop a complete hydrologic budget, comprised of rainfall, evaporation, ground water inputs and losses, flow metering, and continuous flow-weighted composite sampling for a minimum of one year. The monitoring program will be developed to evaluate the performance efficiency of each BMP of the project. A Quality Assurance Project Plan (QAPP) will be prepared in cooperation with FDEP. The monitoring plan will specify the sampling locations by GPS, sampling instruments, and parameters to be sampled. The parameters shall include, but are not limited to: TN (lbs/yr), TP (lbs/yr), TSS (lbs/yr), Cu, NO2/NO3, TKN, NH3, Orthophosphate, oil/grease, fecal coliform, rainfall and flow. The monitoring shall include a sampling location at each inflow and outflow point, as well as upstream and downstream of each wet detention lake and each treatment wetland in order to evaluate the effectiveness of the treatment train. A Water Quality Monitoring Final Report will be prepared and submitted for review and acceptance by FDEP. The Water Quality Final Report will include an explanation of the system design, field and laboratory activities, results and an overall summary. The report will include characteristics of the monitored inputs and outputs, the performance and mass removal efficiencies and pollutant removal costs.

This project will be designed similar to the County's Tropical Farms Stormwater Retrofit Project in that there will be a deep, wet detention area and shallow water, treatment wetlands, designed in a treatment train fashion. This type of treatment train design allows for physical settling of suspended particles within the deep cells and biological nutrient uptake by the plants within the shallow water wetlands. Performance efficiencies and effectiveness for the Tropical Farms project was documented in the project's monitoring report, Performance

Efficiency Evaluation of the Tropical Farms Retrofit Project, Final Report, prepared by Environmental Research & Design, Inc. (H Harper & D Baker), dated January 2013. The Summary of the report stated that…,

"*The Tropical Farms treatment system was constructed for a capital cost of approximately $4,055,901, with funding provided by Martin County and FDEP. The estimated annual O&M cost for the facility is approximately $20,000. The calculated 20-year present worth cost for the facility, which includes capital costs and 20 years of annual O&M costs, using a 4% interest rate, is $4,327,701. Mass removal costs for the Tropical Farms system are attractive and on the lower end of costs commonly associated with wet detention ponds. The estimated nitrogen removal cost is approximately $436/kg* [$198/lb]*, with a phosphorus removal cost of $1,082/kg* [$491/lb] *and a TSS removal cost of $6.58/kg* [$6.56/lb]."

Using the same methodology, with actual maintenance costs, and estimated nutrient load reductions as documented in the BMAP, the cost effectiveness for past, similar projects can range from $200 - $900+/lbs annually, for removal of nitrogen, and $500 - $1,800+/lbs annually, for phosphorus. Consistent with this methodology, based on the total estimated project costs, and an assumed annual O&M cost of $30,000/year, the Project is expected to have a cost effectiveness along the mid to lower end of these ranges, at estimated annual removal costs of $389/lb for nitrogen and $933/lb for phosphorus.

Project Funding and Timeline for Only the Grant and Committed Match Funded Portions

Description	Grant Funding	Match Funding	Number of Months To Complete Task
Design, Permitting	N/A	$0	Month # to Month #
BMP Construction	$530,000	$330,000	Month 3 to Month 18
Education	$10,000	$10,000	Month 1 to Month 36
Monitoring	$60,000	$55,000	Month 18 to Month 33
Reporting	$0	$5,000	Month 1 to Month 36
Totals	$600,000	400,000	
	60.0%	**40.0%**	

Total Number of Months for the Project: 36 Months

Pollutant Load Reductions

BMP #1 Name: Treatment train (lakes and wetlands)

BMPs Installed	**TSS lbs/yr**	**TP lbs/yr**	**TN lbs/yr**	**Sediment lbs/yr**	**BOD lbs/yr**
EMC*	See Table Below: BMP #1 – Additional EMCs				
Pre-Project	-	312.4	1,427.2	-	-
Post-Project	-	124.0	976.2	-	-
Load Reduction	-	188.4	451.0	-	-
% Reduction	-	60.3%	31.6%	-	-

BMP #1 – Additional EMCs

Land Use	**TP**	**TN**
Residential Medium Density (1200)	0.213	1.24
Residential High Density (1300)	0.339	1.39
Commercial and Services (1400)	0.117	0.71
Institutional (1700)	0.125	0.97

Land Use	TP	TN
Open Land (1900)	0.036	0.69
Upland Forests (4000)	0.036	0.69
Water (5000)	0.068	0.51
Wetlands (6000)	0.033	0.61
Transportation and Utilities (8000)	0.143	0.99

PROJECT 5

PROJECT NAME: McCarty Ranch Water Quality, Restoration and Storage Project- Area 3

PROJECT TYPE (Check all that apply): ☐ Urban ☑ Agricultural ☐ Education Only ☐ OSTDS ☐ Other (describe)

PROJECT FUNDING REQUEST: $ 680,356 **MATCH COMMITMENT:** $ 1,020,534

TOTAL PROJECT COST (Sum of Funding Request and Match Commitment): $1,700,890

LEAD ORGANIZATION:

CONTACT INFORMATION:

NAME: JOHN EASON, P.E.
Street Address: 900 SE Ogden Lane
City, State, Zip: Port St. Lucie, FL 34983
Tel: 772-873-6487
Fax: 772-873-6433
Email: jeason@cityofpsl.com

FINANCIAL COOPERATING PARTNERS: City of Port St. Lucie

PROJECT LOCATION AND WATERSHED CHARACTERISTICS:

Geographic Location, City and County (include street address if available):
12525 Range Line Road, St. Lucie County
Size of Project Impact (area needed to build project): 250 Acres
Size of Area Being Treated: Retention basin will be used to treat up to 2 percent of water from the C-23 Canal Basin which has a watershed area of 112,677 acres.
Latitude (decimal degrees): 27.2132
Longitude (decimal degrees): 80.5102
Name of Impaired Waterbody Affected: St. Lucie River and Estuary
Waterbody ID of Impaired Waterbody Affected (WBID): 3194. Class 3M Estuary
TMDL Status and Name, if Applicable: Total Nitrogen, Total Phosphorus, BOD
TMDL Impairment; indicate the parameters in the TMDL, if applicable: Total Nitrogen, Total Phosphorus, BOD
Impairments To Be Addressed by Project: Total Nitrogen, Total Phosphorus, BOD, Total Suspended Solids

Does this project fall within the boundaries of a developing or adopted basin management action plan (BMAP) or within an adopted reasonable assurance plan (RAP)? Check one of the following:

☑ Adopted BMAP ☐ Developing BMAP ☐ Adopted RAP

If any of the above are checked, please complete the following:

Enter name of BMAP or RAP: St. Lucie River and Estuary Basin Management Action Plan

This project contributes to pollutant reductions specified in the BMAP or RAP.
☑ Yes ☐ No

If yes, briefly describe the pollutant reductions specified in the BMAP or RAP that the project is addressing.

The two pollutants that will be addressed with this project that are identified within the BMAP specifically for the St. Lucie Estuary (WBIDs 3193) are Total Nitrogen and Total Phosphorus.

Are the activities in this project required under a permit or does it implement permit application requirements (e.g., municipal separate storm sewer system [MS4], National Pollutant Discharge Elimination System [NPDES])?

☐ Yes ☑ No

LAND USE and STATUS

Land Use	Acres	%
Residential Low Density (1100)	1,909	1.69
Residential Medium Density (1200)	304	0.27
Residential High Density (1300)	0	0
Commercial and Services (1400)	9	0.01
Industrial (1500)	48	0.04
Extractive (1600)	412	0.37
Institutional (1700)	662	0.59
Recreational (1800)	255	0.23
Open Land (1900)	10	0.01
Agriculture (2000)	84,160	74.69
Upland Non-Forested (3000)	1,604	1.42
Upland Forests (4000)	2,724	2.42
Water (5000)	1,811	1.61
Wetlands (6000)	16,279	14.45
Barren Land (7000)	1,108	0.98
Transportation, Communication, and Utilities (8000)	1,382	1.23
Land Use Totals (Acreage and %)	**112,677**	**100**

Land Ownership Status: (check one):

☑ Land necessary for the construction of treatment infrastructure has been acquired. Title is held by: City of Port St. Lucie

PROJECT OVERVIEW

The objective of this project is to improve the water quality of the North Fork of the St. Lucie River by reducing the amount of pollutants occurring in the C-23 Canal. It is anticipated that implementation of this project will lead to a reduction of total nitrogen, total phosphorus, BOD and total suspended solids that originates in the canal from runoff from agricultural and urban areas. The project will include incorporation of Best Management Practices using retention basins / infiltration basins to capture a portion of the flow in the C-23 Canal and remove pollutants in a pond-like structure and infiltrate the stored water directly to the groundwater or returned to the C-23 Canal with emergency overflow outlets during extreme rain events.

This project is the third of six or more phases which will be constructed on a fallow citrus grove and other areas of McCarty Ranch. Area 3 consists of a 250-acre site that will divert flow from the C-23 Canal by pumping into a shallow 4-foot water-depth retention basin constructed with above-ground berms and a static volume of approximately 1,000 acre-feet. Upon completion of Area 3 it is projected that more than approximately 2,579 acre-feet of water could be stored annually. Ultimately, when all six phases of the project have been constructed it is estimated that there could be a total treatment capacity of 11,768 acre-feet annually of water pumped from the C-23 Canal.

Monitoring and reporting the data for total nitrogen, total phosphorus, BOD and total suspended solids will provide verification of the quantities of pollutants that have been removed.

Further information detailing the implementation of this project is provided in "The City of Port St. Lucie, Assessment of Water Farming on Agricultural Lands, The MilCor Group Inc., January 2015" which is attached.

Describe educational activities that are part of the project

To promote public awareness of this project and its contribution to improving water quality in the St. Lucie River and Estuary, information will be presented at public meetings and released to news agencies, environmental groups and state and federal governmental members. It is the intention that these discussions will educate the public about the environmental problems and generate support for further projects to be implemented.

Objective

The objective of this project is to improve the water quality of the North Fork of the St. Lucie River by reducing the total nitrogen, total phosphorus, BOD and total suspended solids in the C-23 Canal. This will be accomplished by pumping water from the canal to a 1,000 acre-foot storage reservoir (retention basin) where it will allow nutrients to be reduced by 50 to 75 percent of their influent values using ground water recharge. The annual reduction in nutrients for Area 3 is estimated to remove 2,005 lbs/yr for total phosphorus, 5,252 lbs/yr for total nitrogen, 14,815 lbs/yr for BOD, and 52,912 lbs/yr for total suspended solids. At the final implementation of all the future phases of this project there could be annual reduction in nutrients of up to 9,091 lbs/yr for total phosphorus, 23,810 lbs/yr for total nitrogen, 67,159 lbs/yr for BOD, and 239,855 lbs/yr for total suspended solids.

This project would also contribute to the reduction in flow from the C-23 Canal by impounding the water and providing infiltration to the ground water. Area 3 of this project could reduce the C-23 discharges by as much as two percent, and at built-out up to 21 percent.

Project Effectiveness Evaluation

Monitoring of the total phosphorus, total nitrogen, BOD, and total suspended solids will be done. Sampling will occur in the storage reservoir over time in the basin. Grab samples will be taken periodically and analyzed at the City's laboratories to determine influent pollutant loads. Pumping records will be kept documenting the amount of water pumped into the reservoir as well as any amount returned to the C-23 Canal.

The results of the monitoring data will be evaluated to determine the quantities of nutrients removed and also, the amount of water flow from the C-23 Canal that has been reduced. The specific monitoring protocols in this analysis include surface water (rainfall, flow, and stage), water quality (TP, TN, BOD, TSS), groundwater, and soil monitoring. Surface water monitoring is assumed to occur monthly and

water quality reporting is estimated to occur quarterly. Evidence of compliance with the services agreement and active permits would be compiled into a report and submitted to applicable agencies. This water storage and treatment project directly contiguous to the C-23 Canal will take a fallow citrus grove at the City's McCarty Ranch Extension Property and convert it to a shallow water storage and treatment facility, diverting nutrient laden water from the C-23 Canal and reduce freshwater discharges into the St. Lucie River. It is estimated that when all 6 phases of this project have been completed it will treatment approximately 11,768 acre-feet annually of water pumped from the C-23 Canal or roughly 24.3 million gallons per day (MGD). Based on an estimated cost of $15,300,000 to complete all six areas the cost per MGD would be approximately $600,000/MGD which compared to similar projects is below average. This project was evaluated the cost per acre-foot would be that would include the initial construction costs along with the annual operating and maintenance costs over a 10 year life cycle. The average cost per acre foot of water retained should be less than $150/acre-foot. This project is estimated at roughly $115/acre-foot. Based on these projections we feel this is a very cost-effective project.

Project Funding and Timeline for Only the Grant and Committed Match Funded Portions

Description	Grant Funding	Match Funding	Number of Months To Complete Task
Design, Permitting	N/A	$180,000	Month 1 to Month 5
BMP Construction	$680,356	$819,644	Month 6 to Month 13
Education	$0.00	$2,500	Month 3 to Month 5
Monitoring	$0.00	$14,640	Month 13 to Month 30
Reporting	$0.00	$3,750	Month 15 to Month 32

Total Number of Months for the Project: 32 months

Pollutant Load Reductions

BMP #1 Name: Water Storage and Treatment

BMPs Installed	**TSS lbs/yr**	**TP lbs/yr**	**TN lbs/yr**	**BOD lbs/yr**
EMC*	10	0.379	1.489	2.8
Pre-Project	70,549	2,674	10,505	19,754
Post-Project	17,637	668	5,252	17,637
Load Reduction	52,912	2,005	5,232	14,815
% Reduction	75	75	50	75

PROJECT 6

PROJECT NAME: Fellsmere South Regional Lake Phase II

PROJECT TYPE (Check all that apply): ☑ Urban ☐ Agricultural ☐ Education Only ☐ OSTDS ☐ Other (describe)

PROJECT FUNDING REQUEST: $ 649,644 **MATCH COMMITMENT:** $433,097

TOTAL PROJECT COST (Sum of Funding Request and Match Commitment): $1,082,741

LEAD ORGANIZATION: City of Fellsmere

CONTACT INFORMATION:
NAME: MARK MATHES
Street Address: 22 S. Orange Street
City, State, Zip: Fellsmere, Florida
Tel: (772) 646-6315
Fax: (772) 571-8615
Email: cdd@cityoffellsmere.com

FINANCIAL COOPERATING PARTNERS: None at time of application

PROJECT LOCATION AND WATERSHED CHARACTERISTICS:

Geographic Location, City and County (include street address if available): Pine St. Fellsmere, FL 32948
Size of Project Impact (area needed to build project): 42 acres
Size of Area Being Treated: 585.5
Latitude (decimal degrees): 27.505°N
Longitude (decimal degrees): -80.725°W
Name of Impaired Waterbody Affected: South Central Indian River Lagoon
Waterbody ID of Impaired Waterbody Affected (WBID): WBID #5003D
TMDL Status and Name, if Applicable: Adopted (Jan. 2013) Central Indian River Lagoon BMAP
TMDL Impairment; indicate the parameters in the TMDL, if applicable: TP, TN
Impairments To Be Addressed by Project: TP, TN

Does this project fall within the boundaries of a developing or adopted basin management action plan (BMAP) or within an adopted reasonable assurance plan (RAP)? Check one of the following:

☑ Adopted BMAP ☐ Developing BMAP ☐ Adopted RAP

Enter name of BMAP or RAP: Central Indian River Lagoon

This project contributes to pollutant reductions specified in the BMAP or RAP.
☑ Yes ☐ No

If yes, briefly describe the pollutant reductions specified in the BMAP or RAP that the project is addressing.

The project will reduce both TP and TN loads entering the Sebastian River and Indian River Lagoon. These pollutants are identified in the adopted BMAP.

Is this project listed in an adopted BMAP document?

☑ Yes ☐ No

If yes, provide the name of the plan or Annual Update/Report to a BMAP document and the page number where the project is listed.

The project was identified in the 2017 Final Progress Report (Central Indian River Lagoon BMAP), The South Regional Lake Project (Project No. F-10) is listed on Page #39 of the report.

Are the activities in this project required under a permit or does it implement permit application requirements (e.g., municipal separate storm sewer system [MS4], National Pollutant Discharge Elimination System [NPDES])?

☐ Yes ☑ No

LAND USE and STATUS

Land Use	**Acres**	**%**
Residential Low Density (1100)	95.0	16.2
Commercial and Services (1400)	16.9	2.9
Agriculture (2000)	416.3	71.1
Transportation, Communication, and Utilities (8000)	57.3	9.8
Land Use Totals (Acreage and %)	**585.5**	**100**

Land Ownership Status: (check one):

☑ Land necessary for the construction of treatment infrastructure has been acquired. Title is held by: City of Fellsmere

PROJECT OVERVIEW

The City of Fellsmere requests financial assistance in the amount of $649,644 or 60% of the total project costs of Phase II of the South Regional Lake Project. The proposed project will treat nutrient-laden stormwater from a 585-acre watershed by constructing on a recently-purchased 42-acre parcel, a treatment train of open water bodies interconnected by open swales. Stormwater from this 585-acre basin currently has no treatment before entering the Fellsmere Water Control Districts (FWCD) system of ditches and canals that ultimately leads to the south prong of the Sebastian River and ultimately the Indian River Lagoon.

The proposed grant project will connect to Phase I of the project which is scheduled to be begin in FY 18-19. Phase I is currently in final design and permitting. The City will complete design and permitting for Phase II at the same time as the first phase of the project. This will provide the City the opportunity to commence Phase II once funding is secured. Phase II (proposed grant project) will consist of the construction of three treatment lakes located on the eastern portion of the site. These 3 lakes will provide the following:

Lake # (Site Plan)	Acreage	Control El.	Residence Time	Storage Volume
Lake #2	1.550	19.00	11.99 Days	7.946
Lake #3	2.451	19.00	20.96 Days	12.262
Lake #4	3.171	19.00	31.35 Days	15.140

In addition to the lakes, the project will include construction of swales consisting of native landscaping such as Bahia sod and other wetland plantings. The approximately 400 linear feet of swales will move the water between the ponds and connect to the swales and two lakes being constructed as part of Phase I.

Once both phases of the project are complete the South Regional Lake will encompass most of the 42-acre parcel that will become the stormwater park. The overall project will encompass five treatment lakes and approximately 800 linear feet of open swales. Stormwater will enter the system from the FWCD Ditch 18 that lies adjacent to the 42-acre parcel via a weir diversion structure set at elevation 19.0 and will pass from one open lake to another via an open swale system. Throughout the stormwater's flow through the system, detention times will settle out harmful pollutants like nitrogen, phosphorus and noxious emerging contaminants. Upon exiting the last treatment lake, the flow will return to Ditch 18 for its journey to the Indian River Lagoon.

Phase II will produce a significant reduction in both TP and TN. The amount of phosphorus will be reduced by 25.54 lbs/yr. representing a 34.2% reduction. The proposed grant project will also reduce the amount of nitrogen by 196.80 lbs/year, a 21.2% decrease. These calculations are only for the BMP's being developed as part of Phase II. Once completed, the entire South Regional Lake project will result in an even greater reduction of pollutants entering the Indian River Lagoon, furthering the objectives set forth by the waterbody's adopted BMAP.

This project is an approved project listed as the South Regional Lake in the City's approved Master Stormwater Plan and BMAP for the South Central Indian River Lagoon Planning Unit. Listed as an impaired waterbody in the state, the St. Sebastian River includes four waterbody segments (DEP Water Quality Assessment Rpt-lRL, 2008) including North Prong Sebastian River (WBID 3128), the Sebastian River Above the Indian River Lagoon (WBID 3129A), Sebastian River (WBID 31298) and the C-54 Canal (WBID 3135). Implementation of the proposed project will address all of the DEP listed impairments for the St. Sebastian River and its C-54 connector.

With the development of the Historic Fellsmere Stormwater and Flood Control Master Plan, the City conducted extensive outreach and held numerous workshops and public meetings. Workshops were conducted on May 11, 2013 and December 12, 2013 and the Plan was adopted on February 6, 2014 as part of a public meeting. In addition, with the purchase of the 42 acres for the stormwater lake and wetland park in 2012, the City also conducted public meetings and outreach as part of this purchase. Finally, the City will conduct additional public meetings once notified of any awards to support the project's construction to notify residents of the previously shared stormwater and flood control benefits and construction timeline for this South Regional Lake. The SJRWMD and FWCD, both regional water control districts, have supported the Plan and provided funding in support thereof.

Describe educational activities that are part of the project

An educational kiosk will be provided on site with information about the project partners as well as project process and benefits of cleansing the storm water prior to discharge to the Sebastian River and the Indian River Lagoon through detailed graphics and information. Finally, the flood benefits will be tracked through the installation of a flood gauge on the property to determine the level water reaches at various storm events. All this data including information on water quality will be made available to the public on the City's website. In addition, the City will highlight the benefits of the project in a press release once the project is completed.

Objective

The proposed stormwater treatment system will divert water from the FWCD Ditch 18 to the 42-acre parcel that lies adjacent to Ditch 18 via a weir diversion structure set at elevation 19.0. Upon entering the stormwater system, the flow will proceed to the initial treatment lake where detention times will settle out harmful pollutants like nitrogen, phosphorus and noxious emerging contaminants. Upon exiting the initial lake, the flow will enter an open swale for transit to the second treatment lake. In total, the master plan for the South Regional Lake comprises of five treatment lakes and approximately 800 linear feet of open swales. For this application, the initial phase will entail two treatment lakes and approximately 400 linear feet of open swales. Upon exiting the last treatment lake, the flow will return to Ditch 18 for its journey to the Indian River Lagoon.

The project will further the following objectives and goals:

- Reduce pollutants entering the Indian River Lagoon from stormwater discharge
- Utilize natural elements to capture and treat stormwater
- Further the objectives Central Indian River Lagoon BMAP
- Further the objectives Historic Fellsmere Stormwater & Flood Control Master Plan
- Provide increased drainage and flood prevention
- Enhance awareness of importance of effective stormwater treatment
- Provide passive recreational opportunities

Project Effectiveness Evaluation

Water quality monitoring is planned for the project at both the inlet and outfall of the South Regional Lake to measure the pre- and post- treatment water quality. The City will work with its engineers to develop a Quality Assurance Project Plan that includes all aspects of data collection, reporting and analysis. This monitoring and analysis will be incorporated into the final report for the project.

The project will cost effectively treat stormwater run-off, reduce pollutants entering the Indian River Lagoon and provide additional flood prevention. The City is utilizing grants for land acquisition, BMP development, education components and recreation facilities to maximize the City investment. Through efficient design and phasing the City could potentially complete the entire South Regional Lake Project with over 50% of the total project cost provided by regional, state and federal grants. The ability to partner with agencies such as SJWMD, FDEP and EPA to develop the project will result in the greatest impact to the environment in the most cost-effective manner.

Project Funding and Timeline for Only the Grant and Committed Match Funded Portions

Description	Grant Funding	Match Funding	Number of Months To Complete Task
Design, Permitting	N/A	$0	Completed by 07/30/2018
BMP Construction	$630,684	$441,057	Month #1 to Month #9
Education	$1500	$0	Month #9 to Month #12
Monitoring	$7,000	$	Month #1 to Month #12
Reporting	$2,500	$	Month #9 to Month #12

Total Number of Months for the Project: 12

Pollutant Load Reductions

BMP #1 Name: Wet Detention

BMPs Installed	**TP lbs/yr**	**TN lbs/yr**
EMC*	.415	2.439
Pre-Project	74.71	921.98
Post-Project	49.17	725.18
Load Reduction	25.54	196.80
% Reduction	34.2	21.3

PROJECT 7

PROJECT NAME: Wastewater Service Area Expansion

PROJECT TYPE (Check all that apply): ☐Urban ☐Agricultural ☐ Education Only ☑ OSTDS ☐ Other

PROJECT FUNDING REQUEST: $ 295,000 **MATCH COMMITMENT:** $ 204,618.70

TOTAL PROJECT COST (Sum of Funding Request and Match Commitment): $ 499,070

LEAD ORGANIZATION: City of Ocala

CONTACT INFORMATION:

Name: Rusella Bowes-Johnson
Street Address: 1805 NE 30th Avenue
City, State, Zip: Ocala, FL 34470
Tel: 352-351-6772
Fax: 352-351-6718
Email: RJohnson@ocalafl.org

FINANCIAL COOPERATING PARTNERS: Potentially St. Johns River Water Management District, and FDEP Springs funding

PROJECT LOCATION AND WATERSHED CHARACTERISTICS:

Geographic Location, City and County (include street address if available):
Size of Project Impact (area needed to build project):
Size of Area Being Treated: Lake Weir Avenue: 69.6648 acres; South Wood Villas: 20.3096 acres; **Total**: 89.9744 acres
SE Lake Weir Latitude:-82.118355 **Longitude**: 29.153409
Southwood Villas Latitude:-82.129314 **Longitude**: 29.1595551
Name of Impaired Waterbody Affected: Silver Springs
Waterbody ID of Impaired Waterbody Affected (WBID): 2772A, 2772C, 2772E
TMDL Status and Name, if Applicable: medium concern, adopted October 2012, Silver Springs
TMDL Impairment; indicate the parameters in the TMDL, if applicable: Nutrient Pollution
Impairments To Be Addressed by Project: Total Nitrogen reduction

Does this project fall within the boundaries of a developing or adopted basin management action plan (BMAP) or within an adopted reasonable assurance plan (RAP)? Check one of the following:
☑Adopted BMAP ☐Developing BMAP ☐Adopted RAP

Enter name of BMAP or RAP: Silver Springs
This project contributes to pollutant reductions specified in the BMAP or RAP. Yes
If yes, briefly describe the pollutant reductions specified in the BMAP or RAP that the project is addressing.

Onsite Sewage Treatment and Disposal Systems (OSTDS) are considered a major contributing factor for the Silver Spring nutrient pollution. The Silver Springs BMAP estimates that 38% of the Total Nitrogen loading in the Upper Floridan Aquifer is from OSTDS. The TMDL for the Silver Springs BMAP requires a 79% reduction in nitrate concentration for each of the impaired waterbodies. This project would contribute to overall reduction.

Is this project listed in an adopted BMAP document? Yes

If yes, provide the name of the plan or Annual Update/Report to a BMAP document and the page number where the project is listed.

This project is number S136 in the Silver Springs BMAP project list. It is titled "Wastewater Service Area Expansion".

Are the activities in this project required under a permit or does it implement permit application requirements (e.g., municipal separate storm sewer system [MS4], National Pollutant Discharge Elimination System [NPDES])? ☐ Yes ☑ No

LAND USE and STATUS

Land Use	Acres	%
Residential Low Density (1100)	69.7	77.4
Residential Medium Density (1200)	20.3	22.6
Land Use Totals (Acreage and %)	90	100

Land Ownership Status: (check one):

☑ Land necessary for the construction of treatment infrastructure is under an easement that allows for construction and access.

PROJECT OVERVIEW

This project will abandon 100 septic tanks in two (2) City of Ocala communities (SE Lake Weir and Southwood Villas), and connect them to City sewer. Of these 100 residents, 54 have applied to participate in this project. This will allow approximately 0.02 MGD of domestic wastewater that is presently treated in OSTDS to be treated at advanced wastewater treatment standards. This will also reduce TN by 1,434 lbs annually.

Property owners who potentially qualify for this program will receive letters from the City of Ocala Engineer's Office. This letter states that "Florida State Statute (381.00655) requires connection to a central sewer system within 365 days of notification to the property owner that sewer services are available within 660 feet of the property." In addition to this letter, it's important to reference City of Ocala Ordinance Chapter 102, Article 2, Division 1, Section 102-105, which states "no new underground storage tanks used to store regulated substances may be installed for either residential or non-residential purposes. Existing underground storage tanks for regulated substances for residential or nonresidential activities shall be removed." These two parameters are the enforcing agents of this project. Additional advertising and outreach will occur as a supplement to the letter. The estimated domestic wastewater is based on the Bureau of Onsite Sewage Programs estimates.

Describe educational activities that are part of the project

To ensure successfulness of current and future OSTDS abandonment projects, part of this projects activities include community outreach in a variety of methods:

- Community forums/classes
- Educational brochures
- Billboards
- Mail-outs

All of these methods will be ongoing throughout the duration of the project.

All of these outreach and education methods will focus on OSTDS maintenance, the benefits of abandonment, local ordinances, and state statues. This will not only promote the City's program, but will also promote BMAP strategies.

Objective

The BMP for this project is the abandonment of 100 traditional septic tanks, or OSTDS. This project will send 0.02 MGD of flow from the afore mentioned OSTDS, to one of the City of Ocala's Water Reclamation Facilities (WRF) that treats wastewater to Advanced Wastewater Treatment standards. By removing the flows from the septic tanks, and sending them to the WRF, this will reduce TN by an estimated 1,434 lbs/year. As OSTDS account for 33% of the Priority Focus Area in the Silver Springs BMAP, it is prudent to reduce this amount. As Silver Springs is impaired due to nutrient loading, this project will be in line to provide a reduction. This project is currently on the Silver Springs BMAP project list.

Project Effectiveness Evaluation

Effectiveness will be measured by the abandonment of 100 commercial and residential locations and their successful connection to City sewer. If all 100 septic tanks are removed, an estimated 1,434 annual TN reduction will occur in the Silver Springs BMAP area. Although a simple measure of effectiveness, the end result will generate a positive impact on the Silver Springs Basin. As this area is monitored by many different agencies, and this project is listed in the BMAP for Silver Springs, we will be utilizing data provided by these agencies monitoring to determine the project effectiveness.

As this project's total costs include the installation of needed infrastructure. The total cost of the project for an annual reduction of 1,434 lbs. of TN is $3,065,950.25. The life expectancy for pipe infrastructure is 40 years. Utilizing the below equation you can determine the cost per pound of Total Nitrogen during the life expectancy of this project.

$3,065,950.25/1,434 lbs. TN = $2,138.04 per lbs. TN
$2,138.04 lbs. TN/40 years = $53.45 per lbs of TN per year

However, it should be noted that this project will provide a reduction in TN for longer than the expected lifespan of the infrastructure. This abandonment of OSTDS, and connection to Central Sewer will provide a system that, with maintenance can be utilized for generations to come.

Project Funding and Timeline for Only the Grant and Committed Match Funded Portions

Description	Grant Funding	Match Funding	Number of Months To Complete Task
Design, Permitting	N/A	Paid Separately	Month #1 to Month #8
BMP Construction	$255,951.30	$184,118.70	Month #9 to Month #21
Education	$17,700	$12,300	Month #9 to Month #24
Monitoring	$	$	Month #21 to Month #36
Reporting	$11,800	$8,200	Month # to Month #36

Total Number of Months for the Project: 36

Pollutant Load Reductions:

BMP #1 Name: Septic Tank (OSTDS) Abandonment

BMPs Installed	TN lbs/yr
EMC*	-
Pre-Project	1,434
Post-Project	0
Load Reduction	1,434
% Reduction	100%

PROJECT 8

PROJECT NAME: Micco Sewer Line Extension Project

PROJECT TYPE (Check all that apply): ☐ Urban ☐ Agricultural ☐ Education Only ☑ OSTDS ☐ Other (describe)

PROJECT FUNDING REQUEST: $ 496,331 **MATCH COMMITMENT:** $ 330,887

TOTAL PROJECT COST (Sum of Funding Request and Match Commitment): $ 827,218

LEAD ORGANIZATION: Brevard County – Natural Resources Management Department

CONTACT INFORMATION:

Name: Walker Dawson
Street Address: 2725 Judge Fran Jamieson Way, Building A, Room 219
City, State, Zip: Viera, FL 32940
Tel: (321) 633-2016
Fax:
Email: walker.dawson@brevardfl.gov

FINANCIAL COOPERATING PARTNERS: St. Johns River Water Management District (SJRWMD), Brevard County Save Our Indian River Lagoon Program

PROJECT LOCATION AND WATERSHED CHARACTERISTICS:

Geographic Location, City and County (include street address if available): From intersection of Barefoot Blvd and U.S. 1 south to 8685 U.S. 1 Micco, FL 32976, Brevard County, FL
Size of Project Impact (area needed to build project): 62 acres
Size of Area Being Treated: 206.1 acres
Latitude (decimal degrees): 27.86964
Longitude (decimal degrees): 80.4952
Name of Impaired Waterbody Affected: North Central Indian River Lagoon Planning Unit
Waterbody ID of Impaired Waterbody Affected (WBID): 2963A1
TMDL Status and Name, if Applicable: Impaired, TN and TP
TMDL Impairment; indicate the parameters in the TMDL, if applicable: TN and TP
Impairments To Be Addressed by Project: TN

Does this project fall within the boundaries of a developing or adopted basin management action plan (BMAP) or within an adopted reasonable assurance plan (RAP)? Check one of the following:

☑ Adopted BMAP ☐ Developing BMAP ☐ Adopted RAP

Enter name of BMAP or RAP: Central Indian River Lagoon Basin Management Action Plan

This project contributes to pollutant reductions specified in the BMAP or RAP.
☑ Yes ☐ No

If yes, briefly describe the pollutant reductions specified in the BMAP or RAP that the project is addressing.

As part of the Micco Septic to Sewer Conversion Project TN loading from septic systems decommissioned as part of the project will be eliminated. The risk of TP loading from future septic system failures will also be eliminated.

Are the activities in this project required under a permit or does it implement permit application requirements (e.g., municipal separate storm sewer system [MS4], National Pollutant Discharge Elimination System [NPDES])?

☐ Yes ☑ No

LAND USE and STATUS

Land Use	Acres	%
Residential Medium Density (1200)	14.7	7.1
Residential High Density (1300)	7.4	3.6
Commercial and Services (1400)	32.9	16
Recreational (1800)	6.7	3.3
Agriculture (2000)	9	4.4
Upland Non-Forested (3000)	17.4	8.4
Upland Forests (4000)	0.3	0.1
Transportation, Communication, and Utilities (8000)	117.7	57.1
Land Use Totals (Acreage and %)		**100**

Land Ownership Status: (check one): **NA**

☑ Land necessary for the construction of treatment infrastructure is under an easement that allows for construction and access.

PROJECT OVERVIEW

The Micco Sewer Line extension will convert 15 commercial and 16 residential properties that are direct waterfront or near the Indian River Lagoon from septic to sewer. The Indian River Lagoon has been impacted for many years from leaching septic drainfields. This project targets a septic neighborhood along the lagoon with very high septic flows and permanently connects them to sewer service. This neighborhood has an estimated daily flow of 15,000 gallons. The portion of this project submitted for partial funding by this 319 grant includes the hook-up fees, service line connections, installation of grinder pumps, and two years of monitoring.

Objective

The Micco Sewer Line Extension Project will eliminate up to 31 leaching drain fields permanently. The conversion of the 31 properties from septic to sewer has an estimated total reduction per year in excess of 1,252 pounds of TN due to several large facilities including waterfront marinas. As businesses and residences expand in this area, the total reduction may be greater.

Although septic to sewer conversion projects are not explicitly identified within the Central Indian River Lagoon Basin Management Action Plan, the reduction of TN as a result of the implementation of this project works towards the intent of the BMAP and will be permanent. It should be noted that the Micco Sewer Line

Extension project has been be submitted for addition to the Central Indian River Lagoon Basin Management Action Plan during the 2018 plan update.

Project Effectiveness Evaluation

The monitoring includes the installation of up to four groundwater monitoring wells to a depth of up to 25 feet. Twenty four sampling events will be conducted at each of the four wells. Sampling will take place approximately monthly for 2 years, approximately 6 months before conversion and 18 months after conversion. Samples will be sent to a third party NELAP certified lab that will analyze each sample for multiple constituents including fecal coliform, NH-3-N, NOX-N, and TKN. A final monitoring report shall be prepared to summarize the monitoring results.

The Micco Sewer Line Extension will eliminate 1,252 lbs-TN/yr. With an overall project cost of $2,369,673 the cost per pound of TN removed is $1,893/lb-TN.

Project Funding and Timeline for Only the Grant and Committed Match Funded Portions

Description	Grant Funding	Match Funding	Number of Months To Complete Task
Design, Permitting	N/A (not eligible for grant funds)	$0	Month 0 to Month 3
BMP Construction	$468,960	$312,640	Month 3 to Month 9
Monitoring	$27,371	$18,247	Month 9 to Month 33

Total Number of Months for the Project: 33

Pollutant Load Reductions

BMP #1 Name: Micco Sewer Line Extension Project

BMPs Installed	**TN lbs/yr**
Pre-Project	1,252
Post-Project	0
Load Reduction	1,252
% Reduction	100%

PROJECT 9

PROJECT NAME: Florida Department of Health in Duval County Imparied Watershed Septic Tank Enforcement Project

PROJECT TYPE (Check all that apply): ☐ Urban ☐ Agricultural ☐ Education Only ☑ OSTDS ☐ Other (describe)

PROJECT FUNDING REQUEST: $201,718 **MATCH COMMITMENT:** $139,568

TOTAL PROJECT COST (Sum of Funding Request and Match Commitment): $341,285.30

LEAD ORGANIZATION: FLORIDA DEPARTMENT OF HEALTH IN DUVAL COUNTY (DOH-DUVAL)

CONTACT INFORMATION:

NAME:	ZHAN BENNETT
Street Address:	900 University Blvd., N., Ste. 300
City, State, Zip:	Jacksonville, FL 32211
Tel:	(904) 253-2023
Fax:	(904) 253-2390
Email:	Zhan.Bennett@flhealth.gov

FINANCIAL COOPERATING PARTNERS: N/A

PROJECT LOCATION AND WATERSHED CHARACTERISTICS:

Geographic Location, city and county (include street address if available): Jacksonville, FL (Duval County)
Size of Project Impact (area needed to build project): 493,076.20 acres
Size of Area Being Treated: 78 square miles
Latitude (decimal degrees): 30.401389
Longitude (decimal degrees): -81.400833
Name of Impaired Water Body Affected: Dunn Creek, Broward River, Ribault River, Ortega River, McGirts Creek, and Deep Bottom Creek*
Water Body ID of Impaired Water Body Affected (WBID): 2181, 2191, 2224, 2249A, 2249B, and 2361*

*Due to the large number of parcels in each WBID on septic systems, Deep Bottom Creek will be inspected if time remains in the project.

TMDL Status and Name, if applicable: The Lower St. Johns River does have TMDLs adopted and approved by EPA for TN, TP, and fecal coliform. See description below.
TMDL Impairment; indicate the parameters in the TMDL, if applicable: Fecal Coliform
Impairments to be Addressed by Project: Fecal Coliform

Does this project fall within the boundaries of a developing or adopted basin management action plan (BMAP) or within an adopted reasonable assurance plan (RAP)? Check one of the following:

☑ Adopted BMAP ☐ Developing BMAP ☐ Adopted RAP

If any of the above are checked, please complete the following:

Enter name of BMAP or RAP: See below

This project contributes to pollutant reductions specified in the BMAP or RAP.
☑ Yes ☐ No

If yes, briefly describe the pollutant reductions specified in the BMAP or RAP that the project is addressing.

Is this project listed in an adopted BMAP document?
☑ Yes ☐ No

If yes, provide the name of the plan or Annual Update/Report to a BMAP document and the page number where the project is listed.

This project lies within the Lower St. Johns River Basin for which two Basin Management Action Plans (BMAP I and II) have been adopted, October 2008 and August 2010 respectively. DOH-Duval is recognized as a signatory and a Basin Working Group Member for both BMAPs. Furthermore, DOH-Duval is a member of the Tributary Assessment Team (TAT).

The basis for this project can be found within both BMAPs and the SWIM Plan; failing or malfunctioning OSTDS are considered a contributing factor to nonpoint source pollution. The goals of this project, as a BMAP Partner and active participant of the Watershed Plan, are:

- Improved water quality trends in the tributaries of the LSJRB that will also help improve water quality in the main stem of the river;
- Decreased loading (levels) of the target pollutant (fecal coliform);
- Enhanced public awareness of fecal coliform sources and impacts on water quality;
- Enhanced effectiveness of corresponding corrective actions by stakeholders;
- Enhanced understanding of basin hydrology, water quality, and pollutant sources; and
- The ability to evaluate management actions, estimate their benefits, and identify additional pollutant sources.

Are the activities in this project required under a permit or does it implement permit application requirements (e.g., municipal separate storm sewer system [MS4], National Pollutant Discharge Elimination System [NPDES])?
☐ Yes ☑ No

LAND USE and STATUS

Land Uses of the Area Being Treated: WBID 2181 – Dunn Creek

Land Use	Acres	%
Residential Low Density (1100)	4395.862387	87.94
Residential Medium Density (1200)	79.70207052	1.59
Commercial and Services (1400)	496.0226004	9.92
Industrial (1500)	0.000361035	0.00
Institutional (1700)	20.44544102	0.41
Recreational (1800)	6.416906195	0.13
Land Use Totals (Acreage and %)	**34998.449766**	**100.00%**

Land Uses of the Area Being Treated: WBID 2191 – Broward River

Land Use	Acres	%
Residential Low Density (1100)	2804.676575	30.50
Residential Medium Density (1200)	402.0224678	4.37
Residential High Density (1300)	7.299355059	0.08
Commercial and Services (1400)	2588.538826	28.15
Industrial (1500)	2531.110417	27.53
Institutional (1700)	26.85184247	0.29
Recreational (1800)	7.573243112	0.08
Agriculture (2000)	109.0459307	1.19
Water (5000)	583.6511109	6.35
Wetlands (6000)	134.4149037	1.46
Land Use Totals (Acreage and %)	**9195.184671**	**100.00%**

Land Uses of the Area Being Treated: WBID 2224 – Ribault River

Land Use	Acres	%
Residential Low Density (1100)	3708.109659	59.66
Residential Medium Density (1200)	277.8199583	4.47
Commercial and Services (1400)	878.9256517	14.14
Industrial (1500)	828.1796216	13.33
Institutional (1700)	271.456821	4.37
Recreational (1800)	96.4996411	1.55
Water (5000)	154.1546864	2.48
Land Use Totals (Acreage and %)	**6215.146039**	**100.00%**

Land Uses of the Area Being Treated: WBID 2249A – Ortega River

Land Use	Acres	%
Residential Low Density (1100)	8078.270059	67.54
Residential Medium Density (1200)	1179.896136	9.86
Commercial and Services (1400)	1387.512314	11.60
Industrial (1500)	91.4475389	0.76
Institutional (1700)	148.7371922	1.24
Recreational (1800)	239.6110321	2.00
Open Land (1900)	835.9080887	6.99
Land Use Totals (Acreage and %)	**6215.146039**	**100.00%**

Land Uses of the Area Being Treated: WBID 2249B – McGirts Creek

Land Use	Acres	%
Residential Low Density (1100)	1529.060183	29.92
Residential Medium Density (1200)	100.1668768	1.96
Commercial and Services (1400)	980.1190195	19.18
Industrial (1500)	285.9411785	5.60
Institutional (1700)	1.752343051	0.03
Recreational (1800)	438.898689	8.59
Open Land (1900)	3.820163965	0.07
Agriculture (2000)	1770.171327	34.64

Land Use Totals (Acreage and %)	**5109.92978**	**100.00%**

Land Uses of the Area Being Treated: WBID 2361 – Deep Bottom Creek

Land Use	Acres	%
Residential Low Density (1100)	676.9100247	55.34
Residential Medium Density (1200)	142.1298959	11.62
Commercial and Services (1400)	312.6835102	25.56
Institutional (1700)	90.71307191	7.42
Water (5000)	0.807435918	0.07
Land Use Totals (Acreage and %)	**1223.243939**	**100.00%**

PROJECT OVERVIEW

The purpose of this project is to implement load reduction strategies, specific to Onsite Sewage Treatment and Disposal Systems (OSTDS), to achieve the fecal coliform TMDLs for the LSJR Basin tributaries. This project will focus on up to six (6) WBIDs out of the 75 tributaries considered impaired for fecal coliform. The impaired waterbodies to be focused on in this project are Dunn Creek, Broward River, Ribault River, Ortega River, McGirts Creek, and Deep Bottom Creek.*

Potential contaminants degrade the quality of surface and groundwater resources as a result of septic system failure, including disease causing bacteria, infectious viruses, household chemicals, and nutrients (nitrates and phosphates). These contaminants present a public health threat to the community. However, this project has ongoing enforcement capabilities to reduce the number of sanitary nuisances potentially causing adverse health effects to local residents.

Specifically, the project will accomplish the following:

- Conduct door-to-door rapid block inspections on a daily basis to identify failing septic systems with the potential for direct and indirect discharge into the St. Johns River or its tributaries.
- Provide 100% of the target audience - all homeowners and tenants within project designated Waterbody Identification (WBID) areas - with educational materials on onsite sewage treatment and disposal systems (OSTDS).
- Develop and implement a post-project survey to measure the effectiveness of public outreach.
- Inspect OSTDS repairs, abandonments, existing and other OSTDS, which may result in the direct or indirect discharge of pollutive waste.
- Support the endeavors of *BMAP I and II*, adopted by the Florida Department of Environmental Protection, as endorsed by the Lower St. Johns River Tributaries Basin Working Group.
- Collaborate with the Florida Department of Environmental Protection, City of Jacksonville, Florida Department of Transportation, JEA (local utility company), City of Atlantic Beach, City of Jacksonville Beach, and City of Neptune Beach.
- Achieve reductions in total suspended solids (TSS), fecal coliform and nutrients.
- Perform Walk the WBID field exercise(s), if one is scheduled during the project time frame.

Describe educational activities that are part of the project.

Public Outreach: The Grantee will conduct public outreach within project designated WBID areas, in the following formats: 1) Preparing and distributing flyers in neighborhoods to announce the project and the related inspections; 2) Providing consultation to homeowners and tenants who are available at the time of OSTDS inspection; 3) Providing appropriate educational material to all homeowners and tenants within project

designated WBID areas, and responding to homeowner questions about the project; and 4) Implementing a post-project survey to measure the effectiveness of public outreach.

Door-to-Door OSTDS Inspections: The Grantee will conduct inspections of all septic systems within project designated WBID areas that have the potential to discharge into the St. Johns River or its tributaries with the exceptions of properties found vacant, properties determined to be connected to central sewer, and properties where access is denied. Inspections consist of the following (and include both office and field duties): 1)Researching addresses; 2) referring compliance issues to other agencies; 3) performing follow up record updates and file review; 4) GIS mapping of sewer infrastructure and potential septic systems within designated WBID areas; 5) probing and inspecting septic tanks and drainfields for signs of failure and sanitary nuisance conditions; and, 6) initiating corrective action in accordance with Chapter 386, F.S., and Chapter 64E-6, F.A.C., if violations are discovered.

Walk the WBID: If applicable, the Grantee will participate in a "Walk the WBIDs" two-part field day exercise with BMAP stakeholders. The Grantee's inspectors will assist in identifying septic tank failures, provide on the ground knowledge of the status of previous repair permits and new septic systems, as well as follow up on septic tank related questions or issues that arise while in the field.

Objective

This project will identify and remedy failing septic systems that may be contributing fecal coliforms to the WBIDs specified in the *Project Location and Watershed Characteristics* section.

The goals of this Florida Department of Health in Duval County project, as a BMAP Partner, are:

- Improved water quality trends in the tributaries of the LSJR that also will help improve water quality in the main stem of the river;
- Decreased loading (levels) of the target pollutant (fecal coliform);
- Enhanced public awareness of fecal coliform sources and impacts on water quality;
- Enhanced effectiveness of corresponding corrective actions by stakeholders;
- Enhanced understanding of basin hydrology, water quality, and pollutant sources; and
- Increased ability to evaluate management actions, estimate their benefits, and identify additional pollutant sources.

The main objectives of this project are:

- To protect the surface waters of the Lower St. Johns River and its tributaries through the enforcement of the State of Florida statutes, rules and regulations governing OSTDS and
- To protect the public's health.

In order to accomplish these goals and objectives, issues dealing with nonpoint source pollution, especially failing residential and commercial septic tank systems in the target WBIDs, must be resolved.

Project Effectiveness Evaluation

The outreach and education provided as part of this project increases public awareness of the many fecal coliform sources and their impacts on water quality.

Project effectiveness will be evaluated with:

- A monthly spreadsheet indicating properties visited, the results of each visit, and a total number of education packets given out;
- Monthly documentation of all enforcement cases for this project by the enforcement officer and other enforcement staff; and
- A post-project survey to measure the effectiveness of public outreach.

The effects of enforcement, education and public awareness should result in an increased number of clients (i.e. homeowners/ tenants) who know how to properly use their septic systems, have septic tanks pumped out and inspected on a regular basis, use water more efficiently, decrease hazardous chemicals being discarded into septic systems, provide better maintenance of OSTDS in general, and utilize more advanced technology for nitrogen reduction when appropriate. It is expected these effects will be observed long after the end of this project which should aid in further reductions of fecal coliform bacteria and nutrients from OSTDS in the St. Johns River and its tributaries.

Project Funding and Timeline for Only the Grant and Committed Match Funded Portions

Description	Grant Funding	Match Funding	Number of Months To Complete Task
OSTDS Inspection, Enforcement, and Education	$201,717.75	NA	Month 1 to Month 12
Grant Project Administration	NA	$139,567.55	Month 1 to Month 12
Prepare and Submit Draft Annual Report	NA	NA	Month 12 to Month 13
Prepare and Submit Comprehensive Final Report	NA	NA	Month 13 to Month 14

Total Number of Months for the Project: 14

The water quality impacts are based on several fundamental assumptions about the pollutants targeted by the TMDLs, modeling approaches, waterbody responses, and natural processes. It is difficult to determine quantitative load reductions expected from the management actions to decrease fecal coliform due to a lack of literature values and high variability. Therefore, the benefits of these management actions were evaluated by FDEP on a qualitative basis, matching elimination, reduction, and prevention activities to known or potential sources. The resulting "Sufficiency of Effort Evaluation" reviewed the following information about each WBID:

- Documentation of the most likely sources;
- A GIS database to determine the spatial and temporal distribution of sources;
- Permit and water quality information;
- Relevant field information; and
- Completed corrective actions.

Because of the difficulty in quantifying pollutant load reductions, no load reductions specific to this project will be provided.